THE
RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal · RAILWAY RECORD.
RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY
AT
33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"
Telephone No.: WHITEHALL 9233 (6 lines)

Annual subscription payable in advance and postage free:
British Isles and Abroad .....£2 5s. 0d.
Single Copies .....One Shilling
Registered at the General Post Office, London, as a Newspaper

VOL. 74 NO. 13 FRIDAY, MARCH 28, 1941

CONTENTS

	PAGE
Editorials	357
Publications Received	361
The Scrap Heap	361
Overseas Railway Affairs	362
The Streamline Vogue in the United States	363
Research on Welded Bridge Failures	365
Great Blizzard in North East England	368
Railway News Section	371
Personal	371
Transport Services and the War	374
Stock Market and Table	380

NOTICE TO SUBSCRIBERS

Consequent on further paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list which will be dealt with in rotation in replacement of existing subscribers who do not renew their subscriptions.

Annual subscriptions are payable in advance and subscribers are advised to pay their renewal accounts before the expiration of the existing subscription, as the dispatch of copies will in all cases be stopped on expiration

DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders No. 1190 *of* 1940

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:—

Mondays to Fridays - 9.30 *a.m. till* 5.0 *p.m.*

The office will be closed on Saturdays

Too Quick in the Uptake

ON March 24 *The Daily Telegraph* and the *Daily Express* informed their readers that the Ministry of Transport had before it a scheme for the unification of the four main-line railways, and that Lt.-Colonel Moore-Brabazon would make known his plans next month. The *Daily Express* went so far as to say that the principle of unifying the railways had been agreed to by the Government and that the scheme in detail would be presented to the Cabinet immediately after Easter. It was added as " understood " that the final financial settlement would be postponed until after the war. The Ministry of Transport was as mystified as the railway companies at the announcement and its origin, but in response to enquiries categorically denied that such a plan was either in existence or contemplation. The genesis of the report was soon traceable to a passage in the eighth report from the Select Committee on National Expenditure. That recorded that its sub-committee on transport services in its investigation of coal and wagon shortage had considered certain proposals for the reorganisation of transport put forward by a witness employed as transport manager by a large and well-known trading organisation. The thin veil over the identity of the witness is even more easily penetrated by the familiar lines of the scheme summarised in the report. It is important to note, however, although it was not thought worth recording by the two newspapers, that the sub-committee concluded that the scheme " would involve not only a costly and far-reaching reorganisation of the present methods of handling traffic, both by railways and traders, but also an expensive revision of the railway rate structure, while in addition there would be considerable opposition from traders whose existing facilities would be radically altered." The sub-committee therefore considered " that it would be impracticable to contemplate such a scheme in wartime."

* * * *

Coal and Wagon Shortage

On the basic matter which the sub-committee had under consideration—the shortage of coal supplies and stocks in many parts of the country—it made some important recommendations. The report is given in full at page 374, but in brief it urges that more drastic steps should be taken to secure the earlier release of wagons, and points out that Government departments are not free from blame in this matter. Calling for immediate planning of a comprehensive scheme to create coal stocks to meet demands next winter, it is declared that the problem of the transfer of labour to mining areas should be tackled resolutely, and if necessary the Government should use its powers of compulsion. It shows appreciation of the need to conserve vital labour at the pits and on the railway systems and recommends that men engaged in work of this kind should not be called up for service with the Armed Forces unless absolutely necessary. Immediate attention should be given to the practicability of withdrawing passenger trains on specified days to permit more freight trains to be moved, and a scheme should be drawn up for relieving individual coal consumers from the payment of extra costs of coal brought from far distant collieries. In the latter connection it should be remembered that Government spokesmen have hinted at a plan of this kind in recent discussions in the House of Commons. After suggesting a reduction in the number of grades of coal and closer co-operation between coal merchants to pool stocks, labour, and local transport, the sub-committee urges that an obligation should be placed on Government departments to provide the Mines Department with quarterly estimates in advance of coal requirements. This is a principle which could well be extended, since prior knowledge of demands to be made on the railways would greatly assist them.

* * * *

Minor Railways Under Control

The report of the directors of the Southport & Cheshire Lines Extension Railway for the year 1940 discloses that, as a consequence of the control of the railway by the Government, it has been agreed that the company shall receive annually by way of compensation the average net revenue of

the three years 1935, 1936, and 1937 (inclusive of bank and other interest), but the amount has not yet been finally determined. Accordingly, it has been necessary to estimate the amount to be received by the company and this is shown in the report at £7,702. In the annual reports for the three years which are to form the basis of the compensation the amounts returned were: 1935, £7,660; 1936, £7,637; 1937, £7,731. The details of the financial arrangements which have been entered into between the Government and the minor railway companies as to compensation for control have not been made public; it is known, however, that the arrangements are in a similar state to those relating to the four main-line companies and the London Passenger Transport Board; that is to say an agreement has been reached and is in draft, but completion of it awaits the Government's provisions relating to war damage for public utilities and railways, and any consequent alterations in the basic compensation agreement. It would appear, too, that the arrangements with the minor railways are not on all fours with those of the main lines, for the basic periods may differ. In the case of the Mersey Railway Company the guaranteed net revenue is £100,015 a year, equal to the net revenue of the company for the 12 months to June 30, 1939, and the company is also to participate to the extent of ¼ per cent. of the pool with the major lines.

* * * *

The Isle of Man Railway Company

The report of the directors of the Isle of Man Railway Company covering the year to December 31, 1940, naturally reflects the changed conditions on the island resulting from the war. As was shown in THE RAILWAY GAZETTE of March 21, there was a decline of £16,417 in receipts and of £6,365 in disbursements in consequence of the suspension of the visiting season and the depressed conditions which prevailed on the island. In May last the company applied to the Insular Government for financial assistance on the lines of the Government guarantee to the British main-line railways, but it was later decided that the matter should be left in abeyance for further consideration until the conclusion of the financial year. An application for financial assistance was later made to the committee appointed under the War (Local Conditions) Act, and its decision is awaited. The net result of the company's working for 1940 was a debit balance of £5,817, compared with a profit of £1,196 (after placing £600 to reserve and renewal fund) for 1939. During the year 370,925 passengers travelled over the company's lines and train mileage was 197,830; the amount of merchandise and minerals conveyed was 25,597 tons. Further reference to the position of the company was made by the Chairman at the annual meeting, reported at page 377.

* * * *

Limiting Freight Train Loads

The modern conditions in which American railroads are compelled to fight for financial solvency are not confined alone to the struggle against competition from the roads and the air, which have produced such striking developments in the speed and luxury of American long-distance railway travel. In similar fashion to the legislative control by Parliament of British railways, the Interstate Commerce Commission in the United States lays an even heavier hand on railway operation, and this restrictive influence, so far as may be judged by our contemporary journals in the U.S.A., is not without its leaning towards the road competitors. But beyond all this, individual American States, under the terms of the Constitution, have the power to impose their own legislation affecting the railways. A flagrant example of State enactment now being contested by the Missouri Pacific RR. as unconstitutional, is a law passed recently by the Nebraska legislature, which lays it down that no freight train shall be made up to more than 70 cars. The railway appeal to the Federal Court at Oklahoma has been unsuccessful, and it will now presumably have to carry its case to a higher authority. The effect of such a law, of course, is to render useless all increases in locomotive power, and, as the *Railway Age* remarks, "supporters of this kind of legislation" fail to realise its effect on "the future of nations which pass laws to hamper their productive efficiency."

* * * *

The Oklahoma Train Limit Law

A statutory three-judge court, sitting as the United States District Court at Oklahoma City, has upheld the constitutionality of the Oklahoma Train Limit Law which limits to 70 vehicles the maximum permissible length of goods trains operating within the State. In announcing this decision, the court refused an application of the Missouri-Kansas-Texas Railroad asking for an Order restraining the Attorney-General of Oklahoma from enforcing the Act. The court, in a two-to-one decision, declined to hold that the Statute was an objectionable regulation, or that it constituted a burden on interstate commerce, but proceeded to say that "it was within the province of the legislature . . . to find that the limitation of trains to 70 cars was reasonably in the interest of safety." The court further held that the fact that compliance with the Statute would necessitate the expenditure by the railway company of additional sums in the operation of its business, and that such cost was an element for consideration "in determining whether the Statute was arbitrary, capricious, or repugnant to due process," was not sufficient to warrant a judicial determination of the invalidity of the law. Moreover, the court held that the Statute was not invalid on the ground that Congress had "occupied the field."

* * * *

The Function of the Civil Service

In his presidential address at the annual general meeting of the Bristol Channel Shipowners' Association at Cardiff on March 7, Sir W. Reardon Smith declared that practical shipping men of ability and experience had been sidetracked by civil servants and, it appeared, had been told to confine their energies to questions of minor importance, leaving civil servants almost complete freedom to deal with matters of vital practical importance and urgency to the country and the shipping industry. A hitherto inarticulate protest, which is becoming more and more widely felt, was thus voiced. It should be borne in mind, however, that the essential function of civil servants is to exercise control in the interests of the Treasury, whose Permanent Secretary is the acknowledged head of the Civil Service, and, that being so, it is only reasonable to assume that they do their duty in accordance with what are probably their unwritten terms of reference. It is beside the point to blame the Civil Service as such for obstruction in the carrying out of emergency measures. What would be relevant to the present situation would be to see whether or not there is any justification whatever for the retention in these desperate times of measures of control designed essentially for peacetime. Incidentally, the complaint to which Sir W. Reardon Smith gave voice is one which is worth remembering in connection with any proposal to nationalise the transport system of this country.

* * * *

Popular Catering

The London & North Eastern Railway has always been to the fore in popular catering, and since the beginning of this year has given a remarkable demonstration of enterprise in this direction. By putting into commission 13 further buffet cars, it has been possible to provide refreshment and light meal service on 28 additional trains all over the system. When restaurant cars were restored on British railways after the early months of the present war, during which they had been completely abolished, the L.N.E.R. provided 57 daily trains with restaurant and 42 with buffet service; by December last the number of buffet trains had gone up to 63, and it is now no fewer than 91 daily, making a total of 146 L.N.E.R. trains in daily operation on which meals and light refreshments are obtainable. Actually there are 148 such services, the difference of two being accounted for by the fact that on the 1 p.m. from King's Cross to Edinburgh and the corresponding return train at 1.5 p.m., both restaurant

and buffet service are now provided, in continuation of the experiment in dual catering first tried on the Flying Scotsman in the year immediately preceding the war. On several routes, especially in Scotland, the buffet cars put on in January and February last restore refreshment service to lines from which it has been withdrawn since the beginning of the war. The mileage now covered daily by L.N.E.R. restaurant and buffet cars now amounts to 18,130, and apart from night trains every main-line express, and many trains over branches, are so provided for. A list of the present L.N.E.R. services appears on p. 374.

* * * *

Tunnelling and Bridging in the U.S.A.

Some interesting notes appeared in the January issue of the *Mutual Magazine*, the monthly staff organ of the Pennsylvania Railroad, concerning the extent of tunnel and bridge construction in the United States. The last collated statistics show that on the 235,386 route miles of line in the U.S.A. there are 1,539 tunnels, with an aggregate length of 320 miles. The record for the western hemisphere is held by the Cascade tunnel of the Great Northern Railway, through the Cascade mountains of Washington on the main line from Spokane to Seattle, which was completed in 1929, and has a length of 7 miles 1,387 yd. Next comes the Moffat tunnel of the Denver & Salt Lake RR., under James Peak in Colorado, with a length of 6 miles 200 yd., and a maximum altitude of 9,257 ft. above the sea; on its opening in 1928 this tunnel, with the rest of the Dotsero cut-off, of which it forms a part, shortened the Denver & Rio Grande Western route between Denver and Salt Lake City by 173 miles. The earliest American tunnel of any length was the Hoosac, under Hoosac Mountain, Massachusetts, on the main Boston & Maine route from Boston to Albany ; 4 miles 1,230 yd. in length, it was so formidable an engineering proposition at the time of its commencement in 1851 that not until 1875, 24 years later, was the first passenger train able to pass through. The total number of bridges on United States railroads is returned as 191,779, with a total length of 3,860 miles. The record for length is held by the Lucin cut-off of the Southern Pacific Railway across the Great Salt Lake in Utah, which for 19 miles continuously is carried on a viaduct of pile trestle construction.

* * * *

"Not for Public Use"

Last week a rare shaft of light was allowed to penetrate public obscurity as to the reasons which induce railway officials to adorn carriage windows with the label " Not for Public Use." The Minister of Transport, during Question time in the House of Commons, told Mr. J. J. Tinker that application of the notice denoted the presence of broken windows, infectious diseases, corpses, high Service officials, lunatics, convicts, and Cabinet Ministers. Some of these may be readily identified by the curious passenger, but in many cases his curiosity for precise information as to the purpose for which the carriage is reserved may not be so readily assuaged by reason of the marked superficial resemblance between categories honoured by the distinguishing label. The most curious student of public affairs will readily identify a broken window but it is not so clear how traffic in infectious diseases may be identified; corpses and high Service officials should be distinguishable by their respective trappings, but lunatics, convicts, and Cabinet Ministers may indeed present a difficult problem to fellow railway travellers. It may well be that the distinguishing visual characteristics of these three categories would not be apparent to the naked eye, and on the political complexion of an onlooker might depend his judgment of a passenger whose appearance seemed familiar but of whose actual position in the social sphere he was momentarily in doubt. The House of Commons apparently could see difficulties arising even among railway officials in attempting to decide in what category each ranked for segregation from the public. An inquiry by Mr. Leach as to how railway officials made up their minds received no reply from the Government benches, and it would indeed appear to be a matter which might exercise the ingenuity of those best versed in classification.

The Position of Driver and Signals

IN Great Britain the custom of driving along the left of the highway became generally established long ago, but, curiously enough, was not made legally binding until quite recent years. With most horse-drawn vehicles it became usual for the driver to sit on, or towards, the right-hand side of the box, as this enabled him better to see the clearance available between opposing vehicles and to ascertain with the minimum of outward movement whether a vehicle ahead could be overtaken. When railways were introduced the right-hand side of the footplate was at first always assigned to the driver, although his running on a fixed track did away with the conditions applying to his coaching predecessor. Several reasons were advanced for this choice, the principal of which were that the fireman could work more comfortably if standing on the left, that the reversing lever was more readily operated by the driver's right hand, and that he could more easily see if anything was wrong with the adjacent track and observe signals made to him from a train coming in the opposite direction. With the comparatively small boilers and open footplates then usual, the observation of such relatively few fixed signals as at first existed presented no difficulty. They were viewed mostly from long distances, in any case. Thus, although railway reasons, so to speak, were advanced for choosing the right-hand position, it may to some extent also be regarded as a heritage of coaching days.

Some continental countries—France, for example—although observing right-hand driving on the roads, adopted British customs on the railway, including left-hand running. Others, however, made rail and road agree, while in two or three, Spain for example, the practice on the leading railways differed. The right-hand position for the driver seems, however, to have been almost universal at first, but in course of time some British locomotive engineers, beginning, we think, with Ramsbottom on the London & North Western Railway, transferred the driver to the left, on the ground that there he was better able to control his train at platforms, that he could then take signals direct from the guard, and, as a general rule, see the fixed signals better, especially in foggy weather, when sighting distance was at times very short. He was also much better placed for seeing the fogmen's hand signals. Stroudley, the Drummonds, and others followed Ramsbottom, and, by the time grouping came in 1923, a number of lines had adopted the left-hand position. After the grouping it became standard for all new engines on three of the main-line railways, leaving the Great Western today as the sole example of the opposite practice in Great Britain. In France, Italy, and Belgium, where trains pass one another on their right, the change also found favour as the size of locomotive boilers increased and that of cab windows diminished, and it has been standard for some time. In India the right-hand drive is still general, but in some other parts of the British Empire the left-hand drive has been preferred.

Closely connected with this question is that of the placing of the signals. The great advantage rightly claimed for the semaphore as a railway signal, when it was first proposed, was that there was no difficulty in recognising at once to which direction of traffic a particular signal applied, a great advantage over other types of signal. The Great Western discs and crossbars, for instance, had to have tails added to the crossbars to distinguish down from up signals when at " danger." With the earliest semaphores in T form, having an arm for each direction, a signal post had necessarily to be on the " off " side of a double line for one direction of traffic. Only in the rare event of there being enough space between the tracks could it stand in the same relation to both. When single armed signals became necessary their logical position was on the left-hand side of the line, where they could be readily recognised. Nevertheless, the right-hand drive rendered sighting better in many places when the signals were on the right-hand side, outside the other track. On some railways, such as the Great Eastern, this was frequently done, and it is so today on the Great Western, where there are not a few instances of signals situated between the up and down lines, possibly because of the extra width of roadbed left from the days of Brunel's

broad gauge. There have been many advocates of the plan of putting all the signals on the " wrong " side of the line on principle. During the lengthy discussions that preceded the first general standardisation of signalling in India in 1906 more than one company proposed this. The old State Railway Company in the Netherlands actually made the practice a strict rule for many years. The trains ran on the right, but the driver stood on the left and all signals were placed on the left, the only instance of such an arrangement that has come to our knowledge. There have, however, been a few instances of signals being placed on the " near " side on double, and on the " off " side on single lines, with what seems to be the unattainable object of reconciling two opposing principles—driving from one side of the engine while it is running on the other side of the railway.

In his report on the Norton Fitzwarren accident, a summary of which appeared in our issue for January 3, page 19, Colonel Sir Alan Mount, although not suggesting that the right-hand drive contributed to the driver's mistake, mentioned the desirability of uniformity in placing the signals and the practice in other countries. In France it has long been usual for all disc type signals to be placed on the left, and brackets are invariably used where there is not space for a post between lines, even for a single isolated signal. Block section semaphores were not always so placed, but the rules governing their use, very different from those of our block telegraph system, minimised such little disadvantage as there was. The left-hand position is now, however, considered preferable for them. In Germany—where right-hand running obtains—distant signals must invariably be placed immediately to the right of the line to which they apply, while stop signals may be situated on the left only in the most exceptional circumstances, when a special signboard is erected to emphasise the fact. Sir Alan Mount recommended that the whole question be given closer attention when new widenings are undertaken and the position reviewed, as opportunity offers, wherever there are parallel lines. With the right-hand drive, where there are two parallel lines for the same direction of traffic and the signals for both are in the normal left-hand position, a driver on the left-hand line looking out of the side of the cab when he is just approaching a signal sees more readily and directly the signal applying to the other line than that governing his own. Under such conditions, and especially if he is accustomed to seeing signals often on the right elsewhere, his liability to a momentary mistake is understandable, particularly in the dark.

* * * *

Spanish Railway Nationalisation

THE Madrid *Boletin Oficial* of January 28 is now to hand with the text of the Law of January 24, nationalising all the Spanish broad-gauge railways. This long expected measure also provides for the grouping of the narrow-gauge railways and for a reorganisation of road transport services. It came into force on February 1. For all the broad-gauge lines a State-owned system is formed, with the organisation of an industrial corporation and with administrative autonomy and independent management. The undertaking will be known as the Red Nacional de los Ferrocarriles Españoles, or National System of Spanish Railways. It is to be administered and worked by a council of administration, consisting of a President, the General Manager of the system, two directors representing the Ministry of Public Works, two the Ministry of Finance, and one each the Ministries of Defence, Agriculture, and Industry & Commerce, with an additional director representing the Syndicates and two technical assessors from the Ministry of Public Works, eleven directors in all. A working committee of four is formed by the President of the Council, the General Manager, and one each of the Public Works and Finance directors. Any resolution of the council gravely affecting the financial equilibrium of the system may be suspended at the instance of the President or the directors representing public works and finance and must then be submitted to the Government. There is a rather noticeable absence of any reference to reserve and depreciation funds, or to disposal of surplus or covering of deficit, but these features may be included in the regulations for the execution of the Law, to be drawn up by the Ministry of Public Works.

The question of taking over the Spanish railways is simplified to some extent by the fact that most of the railways—about 73 per cent.—are on the broad gauge (5 ft. 6 in.), forming a network radiating from Madrid. It is further simplified because about 86 per cent. of the broad-gauge mileage, although made up of many different concessions, is in the hands of three large companies, one of which (the Western-Andaluces) is already partly owned by the State. The position is as follows:—

	Open mileage
Northern of Spain Company	2,375
Madrid Zaragoza & Alicante Company	2,280
Western-Andaluces Company	2,005
	6,660
Other broad-gauge railways	1,065
Total broad gauge	7,725
Narrow-gauge railways	2,838
Total all railways	10,563

The first definite step towards nationalisation was taken when the Law of May 8, 1939, ordered the dissolution of the boards of directors of the three principal companies, and transferred the control of the railways in each case to a Directing Council appointed by the Government. At the same time it must be recorded that in taking over the railways and thus dispossessing the owning companies, the State is only exercising its right according to the old Railway Law of 1877, under which most of the 99-year concessions were granted. Under the 1941 Law the State anticipates the date of reversion of the concession leases, compensating the companies, as provided by the old Law, by the payment of an annuity for each unexpired year of the concession. The annuity is based on the average annual net earnings, in each case, of the period of 15 years, 1921-1935 (that is, for the period immediately before the civil war), plus an addition for prospective future increment calculated on the average increment in the past. The question of compensation is not so simple as might appear from the foregoing, as it is complicated by conditions arising out of the Statute of 1924, which made the State a partner in the companies, in exchange for financial aid. The amount of the annuity is to be fixed by the Railway Department within 30 days and each company may contest it and submit its own valuation within a further period, the final decision resting with the Council of State. The rights of bondholders and other creditors are retained under common law. For the narrow-gauge railways a different solution is adopted. The companies working narrow-gauge lines are invited to group themselves in one or more " federations." Within these federations each company will retain its identity, but the railways will be worked as a single system within each federated group. Tariffs and charges are to be standardised, and rolling stock and traffic pooled. Receipts and expenses are also to be pooled, the individual companies participating in profits *pro rata* to the agreed computed capital each has contributed.

The third part of the Law relates to Road Transport, and here also the object is to group a number of small operators into federations. For this purpose competitive tenders will be invited and concessions will be granted to the contractor or group offering most favourable conditions and employing the best equipment. The National Railway System and the Railway Federations will have preference on competitive routes. Tramway and trolleybus services are excepted. All present licences, except those of the " A " services, will be replaced by the new concessions. Finally the Law provides for the formation of a Junta Superior de Ferrocarriles y Transportes por Carretera, or Transport Board, one of the functions of which will be to study and propose a considered system of co-ordination of road and rail transport. The deplorable shortage of engines and wagons resulting from the civil war and the present acute shortage of petrol due to the European war have combined to precipitate the framing of this new law, which aims at the rehabilitation of the country's transport system so vital to national reconstruction.

PUBLICATIONS RECEIVED

Mastering Momentum. A Discussion of Modern Transport Trends and their Influence upon the Equipment of American Railways. By Lewis K. Sillcox. New York: Simmons-Boardman Publishing Corporation. 9¼ in. × 6 in. 274 pp. Illustrated. Price $2.50 net.—So far as we are aware, no previous author has compiled a book concerned exclusively with the problems arising out of the considerable amount of energy stored in a moving train. Mr. Sillcox, at one time General Superintendent of Motive Power on the Chicago, Milwaukee, St. Paul & Pacific RR., has ample qualifications for his task, and may be congratulated on the thoroughness with which he has tackled it, for no part of this complex subject seems to have escaped adequate treatment. One third of the book is devoted to "The Mechanics of Train Operation," and deals with the development of energy in acceleration, train resistance, and the control and dissipation of energy by braking, with the relevant formulæ and much practical information of value. In a thorough discussion of the theory and practice of train braking, the author explains the features of high-speed train working which have been responsible for such innovations as electro-pneumatic braking combinations, automatic rail sanding, retardation control, and wheel skid detectors, as well as various refinements in freight train braking. The remainder of the book is divided, in roughly equal proportions, between wheels and axles, bogie design, and draft gear, and the subjects covered include the influence of heavy, sustained braking on wheel and bogie design; the connection between high braking temperatures and the shelling and thermal cracking of steel wheels; systems of suspension and dynamic effects on riding qualities; track stresses; weight transfer tendencies at speed; and the effect of draft gear design on shock absorption and the running stability of freight and passenger vehicles. Good illustrations, both diagrammatic and photographic, elucidate the text, and the book concludes with an admirably comprehensive index.

THE SCRAP HEAP

THE VALUE OF A WORLD'S FAIR

During the two seasons that the Golden Gate International Exposition was in progress on Treasure Island, there were numerous speculations on the value of the Fair as an attraction to out-of-state tourists. Now John F. Forbes, president of Californians Inc., non-profit tourist promoting organisation in San Francisco, makes a specific announcement. During the Exposition in 1939 and 1940, he says, a total of 2,530,643 tourists came to California and their expenditures amounted to $328,762,470. The worth to the state of this outpour of gold was $71,599,925. No similar periods in California's history have witnessed so many visitors, or as much money spent by them. "The Exposition was a decided business stimulator," Mr. Forbes observed, "it made thousands of new friends for the state and it whetted the appetites of travellers for return trips in the future."—*From "The Argonaut," San Francisco.*

* * *

MICRO-FILM OF "THE TIMES"

A micro-film of each number of *The Times* from 1785 to 1938 is now nearing completion and will be the first newspaper micro-film in this country to become available for general use. Micro-photography has been employed for some time in this country by commercial undertakings for the purpose of making a compact record of their documents, but it has not yet been extensively used for the copying of newspapers. In America, however, the Recordak Newspaper Service is a well-established institution, which not only provides micro-filming equipment for the use of the newspaper itself, but also allows of film prints being made available to libraries. A micro-film of a newspaper occupies about 2 per cent. of the space of a filed copy of the newspaper.

The files of *The Times* from 1785 to 1938 contain about 750,000 pages. A reel of Recordak micro-file film, 100 ft. in length, takes 800 pages of the paper, and is stored in a carton about 4 in. square and 1½ in. deep. Early copies of *The Times* require only two reels for a complete year, but from about 1911 onwards most copies of *The Times* have required 12 reels for each year.

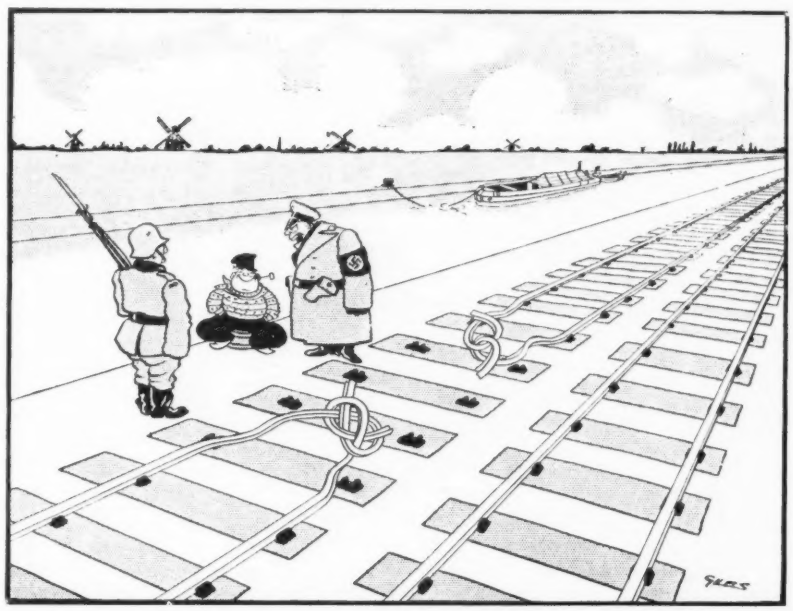
This micro-film of *The Times* has been made by the Recordak Division of Kodak Limited, for its own use. The copying machine used is described as a micro-file Recordak designed to operate with the micro-file Recordak camera, and is specially adapted to the copying of large bound volumes such as newspaper files.

An oscillating table brings each facing page successively into the photographic plane. A self-levelling book cradle compensates for the varying thickness of the two halves of the open file, thus ensuring critically sharp images from start to finish.

The Recordak film reader, or viewer, allows of the film being examined on a brilliant translucent screen at a wide range of magnifications to suit the subject matter and the purpose of the user.—*From "The Times."*

* * *

Mr. E. H. Harriman (father of Mr. W. Averell Harriman) was the head of the Union Pacific Railroad. When in the 1907 financial panic the shares of that railway stock dropped below 100 on Wall Street, I heard the father give the advice: "Boys, go and pawn your watches and buy Union Pacifics." Within a few months they had risen to 250.—*From "The Star."*



"Vot you mean—you don't know nodding about it!"

Courtesy of] ["*Reynolds News*"

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

SOUTH AFRICA

New Signalling at Germiston and Krugersdorp

The Germiston East signal box, with 47-lever electrically locked power frame, part of the scheme for working the layout from three instead of six signal boxes, is now in service. (A 12-lever extension to it has now been ordered.) The frame was obtained originally for Jeppe, but had to be used temporarily at Johannesburg, after the fire at the signal box there just before Easter, 1938. [Recorded in our issue of May 20, 1938, page 977, and illustrated in that for October 28, 1938, page 732—Ed., *R.G.*], a route relay installation then being decided on for Jeppe and completed in due course. Another, of the "NX" type, was brought into service at Johannesburg in November, 1939, releasing the frame at first intended for Jeppe. It has not yet been decided what power system is to be used for the remaining two new signal boxes at Germiston, but, as there is a large volume of shunting, it appears probable that preference will be given to the individual lever system. A route relay system has, however, been selected for Krugersdorp.

UNITED STATES

Abandoned Mileage

During 1940 a total of 1,299 miles of railway was abandoned. This figure was 1,273 miles more than the mileage of new lines completed during the year.

The largest single abandonment, as well as the largest abandonment of an entire line, was that of the Tonopah & Tidewater Railroad between Crucero, Cal., and Beatty, Nev., 143 miles. The second largest abandonment was that of a branch of the Minneapolis & St. Louis, between Conde, S.D., and Alaska, 103 miles. The Norfolk Southern stood third with 50 miles between Suffolk, Va., and Edenton, N.C., and the Chicago, Rock Island & Pacific was in fourth place with the abandonment of 49 miles between Cameron junction, Mo., and Beverly.

The second largest abandonment of an entire railway was that of the Carleton & Coast, 20·4 miles; and the Mound City & Eastern was third with 18 miles. During 1940 there were 13 entire railways abandoned. The figures include all lines permanently abandoned, irrespective of whether the lines had been taken up at the end of the year.

New Locomotives

New locomotives placed in service in 1940 on Class I railways totalled 419, of which 126 were steam and 293 electric and diesel. In 1939, 320 new locomotives were put in service, of which 100 were steam and 220 were electric and diesel, and in 1938 there was a total of 276 placed in service, including 165 steam and 111 electric and diesel.

On January 1, 1941, the new locomotives on order numbered 206, which included 115 steam and 91 electric and diesel. A year earlier there were 117 on order, of which 51 were steam and 66 were electric and diesel, and on January 1, 1939, there were 73, which included 30 steam and 43 electric and diesel.

New Goods Vehicles

Class I railways placed 65,545 new goods vehicles in service during 1940, according to reports for the year received by the Association of American Railroads. This was an increase of 41,017 compared with 1939, and of 47,028 compared with 1938.

The 1940 total included 33,252 box, 29,306 coal, 1,246 flat, 646 refrigerator, 388 stock, and 707 miscellaneous cars.

Class I railways on January 1, 1941, had 35,702 new goods vehicles on order, compared with 37,099 on January 1, 1940, and 5,080 on January 1, 1939. The total on order at the beginning of the present year included 19,117 box, 14,579 coal, 1,500 refrigerator, 441 flat, 50 stock and 15 miscellaneous cars.

Agricultural Improvement Train

To foster better farming in the area served by the Illinois Central Railroad, a special exhibition train has been arranged by and is now touring that system. Its main object is to secure the preservation and improvement of the soil, and it is equipped with a cinema car, a lecture car, an exhibit car, staff living accommodation and a baggage and office car. In co-operation with agricultural departments, university faculties, chambers of commerce, county agents, and other organisations, exhibits have been collected and lecture programmes arranged by the I.C.RR. General Agricultural Agent, who is in charge of the train.

MEXICO

The National Railways' Position

The two successive reorganisations of the management of the National Railways system, carried out under the orders of President Cardenas during the year 1940, have not resulted in a restoration of safety and efficiency. The warnings given to the Workers' Council, [outlined on page 115 of our issue of August 2 last—Ed., *R.G.*], that the consequences of a failure to reorganise the service would result inevitably in the abolition of the Workers' administration and taking over by the Government, have not had the desired effect, and the matter has now been taken up by a group of deputies of the National Legislature. A Bill has been approved unanimously by the Chamber, removing the control of the railway system from the Workers' Syndicate. It remains to be seen if the Bill will pass the Senate. The Workers' administration submitted a plan for economies at the latter end of last year, including the forfeiture by the State of the statutory quota of 5·64 per cent. of the gross receipts provided for in the original Decree of June 23, 1937 (described in The Railway Gazette of September 9, 1938), but the plan does not appear to have been accepted by the Government. President Manuel Avila Camacho is said to be convinced of the necessity for a reform, and would favour the abolition of the Workers' administration and the formation of a Government board of management.

The earnings of the National system continued to increase during 1940, and the returns show that during the first eight months of the year gross operating revenues reached the record figure of $109,217,970, compared with $104,069,344 in the same period of the previous year. Working expenses were $92,787,218 in the eight months of 1940, and $85,187,621 in 1939. Against the increase of 4·95 per cent. in earnings therefore, there was a rise of 8·92 per cent. in expenditure.

CHINA

Canton Area Returns to Normal

The first 35 km. of the Canton-Hankow Railway northwards from Canton had, until January 17, been in use only for Japanese military traffic. On that date, however, this section was declared open for ordinary Chinese public traffic.

Yunnan-Burma Railway to be Expedited

A scheme has been drawn up by the Ministry of Communications in Chungking, and is under consideration by the Executive Yuan, for the acceleration of construction work upon the western section of the Yunnan-Burma Railway from Hsia Kwan, the commercial centre near Tali-fu, towards the Burma frontier near Kunlong, on the Salween, 100 miles east of Lashio, the north-eastern railhead of the Burma Railways. [For later news see page 378.—Ed., *R.G.*]

INDIA

Locomotive Pooling

Mr. P. R. Agarwal, B.Sc.(Eng.), in a contribution to the January, 1941, *Quarterly Technical Bulletin* issued by the Director of Civil Engineering, gives some interesting details of locomotive pooling. As a result of the Pope Committee's recommendations intensive pooling is now in force on many of the major broad-gauge systems. One of the longest continuous daily runs by a single engine is between Calcutta and Nagpur and *vice versa*, on the Bengal-Nagpur Railway, a distance of 703 miles with two intermediate changes of crew.

The marked increase in engine-mileage per day per engine in use on certain lines after the publication of the Pope report is shown below.—

Year	Eastern Bengal	East Indian	G.I.P.	North Western
1931–32 ...	102	97	120	98
1932–33 ...	99	100	122	99
1938–39 ...	121	103	132	118
1939–40 ...	122	103	138	119

THE STREAMLINE VOGUE IN THE UNITED STATES

Sixty streamline trains are now at work in the U.S.A., 32 of which were put in operation in the twelve months from September, 1939; equipment for 26 further streamliners, some of which have since been introduced, was on order in November, 1940

NEW streamline trains are continually being put into operation in the U.S.A., and at the time of compilation of the following statistics* their number had increased to exactly 60, 47 operated by diesel power and 13 by steam. By arrangement between the companies concerned, two pairs of these trains (the Champion of the Atlantic Coast and the Champion of the Florida East Coast, also the Sam Houston Zephyr of the Burlington and the Texas Rocket of the Rock Island) work on the same through schedules, turn and turn about, the lines of both companies in each pair being used by each train.

For the various workings a total of 98 sets of cars is in service, ranging from the two-car units of the Southern Railroad to the 17-car City of Los Angeles, which has since been increased to 18 cars by the addition of a lounge car of new design for coach passengers; three cars in the unit last-mentioned are required to house the power plant, and one car provides baggage space and dormitory accommodation for the train crew, the remaining fourteen cars (including a

* Based on an article in the November 16, 1940, issue of our American contemporary, the *Railway Age*, which was a double number devoted particularly to progress in passenger service

STREAMLINE TRAINS IN THE UNITED STATES, 1940

Railway	Train	Date of Introduction‡‡	Route	No. of trains in service	Daily journey	Daily mileage	Overall speed	No. of cars in train: Total	No. of cars in train: Power	No. of cars in train: Excluding power	Consist **	Weight of train	Average weight per car
Diesel-Operated							m.p.h.					tons	tons
C. Burlington & Q.	Denver Zephyr	8.11.36	Chicago-Denver	1	Single	1,036	64·8	13	2	11	P.S.C.	648	49·7
,,	,, ,,	8.11.36	Denver-Chicago	1	,,	1,036	66·1	13	2	11	P.S.C.	648	49·7
,,	Twin Zephyr	18.12.36	Chicago-Minneapolis	2	Double	874	65·5	8	1	7	P.C.	339	42·4
,,	Pioneer Zephyr	30.4.40	St. Louis-Burlington	1	,,	442	—	4	1*	3	C.	135	33·8
,,	Sam Houston Zephyr	1.10.36	Fort Worth-Houston	1	,,	566	57·4	4	1*	3	P.C.	121	30·3
,,	Mark Twain Zephyr	25.10.38	St. Louis-Kansas City	1	,,	558	55·8	3	1*	2	P.C.	110	36·7
,,	General Pershing Zephyr	30.4.39	,, ,,	1	,,	558	55·8	5	1	4	P.S.C.	360	72·0
,,	Silver Streak Zephyr	15.4.40	Lincoln-Kansas City	1	,,	502	55·5	4	1*	3	P.C.	236	59·0
,,	Texas Zephyr	3.11.38	Denver-Dallas	2	Single	834	45·7	9	1	8	P.S.C.	—	—
A.T. & Santa Fe	Super-Chief§	15.6.37	Chicago-Los Angeles	2	,,	637†	56·6	11	2	9	P.S.	459‡	51·0‡
,,	Chief	22.2.38	,, ,,	6	,,	743†	47·6	13	2	11	P.S.	589‡	53·5‡
,,	El Capitan§	22.2.38	,, ,,	2	,,	637†	56·6	7	1	6	C.	280‡	46·7‡
,,	Tulsan	10.12.39	Kansas City-Tulsa	1	Double	512	53·0	6	1	5	P.C.	246‡	49·2‡
,,	Golden Gates	1.7.38	Oakland-Bakersfield	2	,,	626	56·1	7	1	6	C.	278‡	46·3‡
,,	Chicagoan	17.4.38	Chicago-Oklahoma City	1	Single	850	50·6	7	1	6	P.C.	277‡	46·2‡
,,	Kansas Cityan	17.4.38	,, ,,	1	,,	850	50·6	7	1	6	P.C.	277‡	46·2‡
,,	San Diegan	27.3.38	Los Angeles-San Diego	1	2 Double	512	—	8	1	7	P.C.	310‡	44·3‡
C. & N.W.-U.P.	City of Los Angeles	27.12.37	Chicago-Los Angeles	1	Single	766†	64·2¶	17	3	14	P.S.C.	994	58·5
,,	,, ,,	15.5.36	,, ,,	1	,,	766†	64·2¶	13	2	11	P.S.C.	563	43·3
,,	City of Denver	18.6.36	Chicago-Denver	2	,,	1,048	66·8§§	14	2	12	P.S.C.	602	43·0
,,	City of Portland	27.3.39	Chicago-Portland	1	,,	757†	64·2¶	10	2	8	P.S.C.	475	47·5
C. & N.W.-U.P.-S.P.	City of San Francisco	14.6.36	Chicago-San Francisco	1	,,	753†	64·2¶	16	3	13	P.S.C.	1,009	63·1
Union Pacific	City of Salina	31.1.35	Salina-Topeka	1	Double	560	—	3	1*	2	C.	123	41·0
Rock Island	Rocky Mountain Rocket	12.11.39	Chicago-Denver	2	Single	1,058	56·3	8	1	7	P.S.C.	488	61·0
,,	Kansas City-Dallas Rocket	15.11.38	Kansas City-Dallas	2	,,	677	52·8	5	1	4	C.	259	51·8
,,	Chicago-Des Moines Rocket	26.9.37	Chicago-Des Moines	1	Double	716	59·7	5	1	4	C.	256	51·2
,,	Chicago-Peoria Rocket	19.9.37	Chicago-Peoria	1	2 Double	644	62·3	5	1	4	C.	256	51·2
,,	Kansas City-Minneapolis Rocket	29.9.37	Kansas City-Minneapolis	2	Single	489	53·8	4	1	3	C.	223	55·8
,,	Texas Rocket	3.11.38	Fort Worth-Houston	1	Double	566	57·4	4	1*	3	P.C.	129	32·3
Chicago & N.W.	The 400	24.9.39	Chicago-Minneapolis	2	Single	419	65·4	12	2	10	P.C.	718	59·8
Illinois Central	Green Diamond	17.5.36	Chicago-St. Louis	1	Double	588	59·8	5	1	4	P.C.	205	41·0
Seaboard	Silver Meteor	2.2.39	New York-Miami	3	Single	1,018†	55·5	16	2	14	C.	943	58·9
Baltimore & Ohio	Capitol Limited	23.11.38	New York-Chicago	2	,,	996	48·6	15	2	13	P.S.C.	1,295	86·3
,,	National Limited	28.6.40	New York-St. Louis	2	,,	1,110	44·1	13	2	11	P.S.C.	1,112	85·5
,,	Royal Blue	24.6.35	New York-Washington	1	Double	447	55·9	10	2	8	P.C.	865	86·5
,,	Columbian	26.9.37	,, ,,	1	,,	447	55·9	10	2	8	P.C.	852	85·2
Atlantic Coast	Champion	1.12.39	New York-Miami	1	Single	1,329††	55·6	16	2	14	C.	929	58·1
Florida East Coast	,, ,,	1.12.39	,, ,,	1	,,	1,329††	55·6	16	2	14	C.	966	60·4
,,	Henry M. Flagler	3.12.39	Jacksonville-Miami	1	Double	692	58·0	8	1	7	C.	483	60·4
Missouri Pacific	Eagle	10.3.40	St. Louis-Omaha	2	Single	478	53·1	7	1	6	P.C.	408	58·3
K.C.S.-L. & A.	Southern Belle	1.9.40	Kansas City-New Orleans	3	,,	873	40·5	5	1	4	P.S.C.	325	65·0
Gulf, Mobile & Ohio	Rebel	1.7.35	Jackson-New Orleans	2	,,	497	—	4	1*	3	P.S.C.	214	53·3
Southern	Vulcan	24.8.39	Chattanooga-Meridian	2	,,	591	—	2	1*	1	C.	152	76·0
,,	Goldenrod	24.8.39	Birmingham-Mobile	1	Double	528	—	2	1*	1	C.	152	76·0
,,	Joe Wheeler	29.8.39	Oakdale-Tuscumbia	1	,,	497	—	2	1*	1	C.	152	76·0
,,	Cracker	11.10.39	Atlanta-Brunswick	2	Single	550	—	2	1*	1	C.	152	76·0
Boston & Maine	Flying Yankee	1.4.35	Boston-Portland-Bangor	1	2 Double	734	49·7	3	1*	2	P.C.	110	36·7
N.Y. New Haven & H.	Comet	5.6.35	Boston-Providence	1	5 Double	440	54·0	3	1*	2	C.	116	38·7
Steam-Operated													
New York Central	Twentieth Century Ltd.	15.6.38	New York-Chicago	4	Single	958	59·9	13	—	13	P.S.	715‡	55·0‡
,,	Pacemaker	28.7.39	,, ,,	2	,,	961	56·4	9	—	9	C.	539‡	59·9‡
,,	Mercury	15.7.36	Cleveland-Detroit-Chicago	2	,,	448	58·8	8	—	8	P.C.	524‡	65·5‡
Pennsylvania	Broadway Limited	15.6.38	New York-Chicago	2	,,	903	56·4	8	—	8	P.S.	434‡	54·3‡
,,	Trail Blazer	28.7.39	,, ,,	2	,,	903	53·1	9	—	9	C.	612‡	68·0‡
Milwaukee	Morning Hiawatha	29.5.35	Chicago-Minneapolis	2	,,	421	65·6	9	—	9	P.C.	709‡	78·8‡
,,	Afternoon Hiawatha	21.1.39	,, ,,	2	,,	421	65·6	9	—	9	P.C.	709‡	78·8‡
Southern Pacific	Morning Daylight	21.3.37	San Francisco-Los Angeles	2	,,	470	49·5	14	—	14	P.C.	604‡	43·1‡
,,	Noon Daylight	10.1.40	,, ,,	2	,,	470	48·7						
,,	Sunbeam	19.9.40	Houston-Dallas	2	,,	264	60·0	7	—	7	P.	320‡	45·7‡
Chicago & Alton	Abraham Lincoln	13.12.37	Chicago-St. Louis	1	Double	564	57·8	8	—	8	P.C.	366‡	45·8‡
,,	Ann Rutledge	1.7.35	,, ,,	1	,,	564	57·8	8	—	8	P.C.	366‡	45·8‡
Reading	Crusader	26.7.37	Jersey City-Philadelphia	1	2 Double	361	56·7	5	—	5	P.C.	444‡	88·8‡

* Power unit with baggage and/or mail accommodation. † Average daily mileage, including terminal turn-round time. †† Complete journey, taking slightly over 24 hr.
‡ Excluding power unit or locomotive. ‡‡ Date of introduction of latest streamline equipment, or of transfer of old equipment to new service. § Twice weekly.
§§ Eastbound speed; 65·5 m.p.h. westbound. ‖ Five return journeys each month. ¶ Average speed over C. & N.W. section of journey. ** *Consist*—P = Pullman equipment. S = Pullman sleeping cars. C = Coaches.

dining and a dining-kitchen car) being passenger accommodation. Six independent sets of cars are needed to maintain the daily service of the Santa Fe Chief over the 2,228 miles between Chicago and Los Angeles, as compared with two sets each for the same company's Super-Chief and El Capitan, which run twice weekly; at the other end of the scale the Comet of the New York, New Haven & Hartford makes five double journeys daily between Boston and Providence.

Eleven of the train sets in use are required to make journeys of over 1,000 miles daily, and the most remarkable examples are probably the Denver Zephyr of the Burlington and the City of Denver of the combined Chicago & North Western and Union Pacific, with their booked overall speeds of 66·1 and 66·8 m.p.h. westbound, and 64·8 and 65·5 m.p.h. eastbound respectively, all intermediate stops included. Thirty of the units make journeys of over 800 miles each day; thirteen of the trains have overall speeds exceeding 60 m.p.h., 37 exceed 55 m.p.h., and 45 exceed 50 m.p.h. throughout. In certain cases the number of sets of cars allocated to a service exceeds the normal demand; for example, the Twentieth Century Limited of the New York Central—with its overall average of 59·9 m.p.h. for 958 miles probably the most notable of the achievements with steam—can maintain its schedule with two trains, one in each direction daily, but four sets of cars are earmarked on account of frequent duplication. The formations of the trains given in the table in a number of cases represent the minimum, and are added to at times of pressure. For example, in summer the Denver Zephyr of the Burlington adds a combined " dinette " coach, and is made up to fourteen vehicles weighing 698 tons. On the Santa Fe the all-coach El Capitan carries in summer two or three additional chair cars and an extra dining car, making ten or eleven vehicles; the San Diegan, Chicagoan, and Kansas Cityan are increased at week-ends by one to three chair cars; and the Chief carries additional lightweight Pullman sleepers whenever necessary. The Southern Belle of the Kansas City Southern and Louisiana and Arkansas is increased to seven cars between Shreveport and New Orleans, the additional vehicles being a sleeping car and a baggage car, and a second additional baggage car runs between Shreveport and Texarkana. But the most extreme example of expansion is the Hiawatha of the Milwaukee, which now has two express cars added to its westbound formation daily, and passenger cars as required up to a maximum of fifteen vehicles, which the locomotives assigned to this duty are expected to handle at the extremely high speed of this service—the fastest operated with steam in the world—without loss of time. The fact that the Hiawatha has during the past year maintained an average on-time record of 93 per cent. shows how successfully these loads are coped with. The last two columns of this table show the weight of each set of cars in tons (of 2,240 lb.), and the weight per car. There are some considerable variations in individual car weights, which range from 30·3 tons to 88·8 tons. The heaviest cars are mostly reconditioned stock of the previous all-steel standard type; the newer lightweight stock mostly ranges in weight from 43 to 55 tons, with an average of about 50 tons a car.

In a second table details are given of the passenger loading of certain of the principal high-speed trains and the revenue earned by them per mile. The revenue record is held by the Afternoon Hiawatha service of the Milwaukee—a steam-hauled train—which has earned $3·79 a mile with an average passenger complement of 187; the largest passenger complement has been that of the New York Central's steam-hauled Mercury, with a daily average of 355 passengers, earning $3·36 a mile. The City of San Francisco and City of Angeles earn $3·49 and $3·13 a mile respectively for journeys of over 2,200 miles in length, on which the average passenger complement is 130 and 124 in 13 and 14 passenger cars. Maximum luxury, probably, is reached in the Twentieth Century Limited, which by having its sleeping accommodation confined to single rooms, accommodates an average of only 67 pasesngers in 13 cars, and yet earns $2·61 a mile on its 958-mile journey. The average passenger complement per car is, of course, lowest on trains incorporating Pullman sleeping equipment, and particularly a large proportion of single rooms, and is highest per car on trains entirely or largely consisting of coach or third class accommodation. The composition of each train is indicated in the table, which also shows the trains that make part of their journey at night; streamlined coach trains working at night are equipped with cars which provided comfortable sleeping accommodation in adjustable reclining chairs.

Passenger Complement and Revenue Statistics of Important U.S.A. Streamline Trains in 1940

Railway	Train	Power	No. of cars (excl. power)	Average		Consist	Time of Journey
				No. of Passengers	Revenue per mile		
					$		
Milwaukee ...	Afternoon Hiawatha	Steam	9	187	3.79	P.C.	Day
C. & N.W.–U.P.–S.P.	City of San Francisco	Diesel	13	130	3.49	P.S.C.	Night*
New York Central	Mercury ...	Steam	8	355	3.36	P.C.	Day
Chicago & N.W.	The 400 ...	Diesel	10	274	3.24	P.C.	,,
Milwaukee ...	Morning Hiawatha	Steam	9	104	3.20	P.C.	,,
C. & N.W.–U.P.	City of Los Angeles	Diesel	14	124	3.13	P.S.C.	Night*
Alton... ...	Abraham Lincoln / Ann Rutledge	Steam	8	130	2.79	P.C.	Day
Burlington ...	Denver Zephyr	Diesel	11	123	2.74	P.S.C.	Night
New York Central	20th Century Limited	Steam	13	67	2.61	P.S.	,,
Florida E. Coast	Champion ...	Diesel	7	187	2.54	C.	,,
C. & N.W.–U.P.	City of Denver	,,	12	133	2.40	P.S.C.	,, *
C. & N.W.–U.P.	City of Los Angeles	,,	11	98	2.39	P.S.C.	,, *
New York Central	Pacemaker ...	Steam	9	167	2.18	C.	,,
Burlington ...	Twin Zephyrs ...	Diesel	7	96	1.82	P.C.	Day
Rock Island ...	Chicago–Des Moines Rocket	,,	4	101	1.82	C.	,,
Missouri Pacific	Eagle	,,	6	198	1.81	P.C.	,,
Florida E. Coast	Henry M. Flagler	,,	7	145	1.81	C.	,,
Seaboard ...	Silver Meteor ...	,,	14	283	1.78	C.	Night
C. & N.W.–U.P.	City of Portland	,,	8	92	1.69	P.S.C.	,,
Rock Island ...	Chicago-Peoria Rocket	,,	4	91	1.67	C.	Day
Illinois Central	Green Diamond	,,	4	62	1.46	P.C.	,,

* 2 consecutive nights on journey. P. Pullman cars. S. Pullman Sleeping Cars. C. Coaches.

In all, 32 new streamline trains were put into operation in the twelve months from September, 1939, to the compilation of this record, involving the building of 203 new cars, and allocated to 20 different services. At the beginning of November, 1940, equipment for 26 new trains, to be used on 17 new services, and also involving the building of 203 new cars, was on order, and in part was nearing completion. These orders include a new 17-car train for the City of Los Angeles (Chicago & North Western and Union Pacific) and another for the City of San Francisco (the same companies with the Southern Pacific), both of which will then run ten times monthly in each direction, or every third day. The Southern Pacific is building streamline sets for the San Joaquin and Lark from San Francisco to Los Angeles; two trains for the former require 20 cars in all, and two for the latter 36 cars. The Burlington and the Rock Island are each building an 8-car train—the St. Louis—St. Paul Zephyr and the St. Louis—St. Paul Rocket respectively—for joint operation between the two cities indicated; the Rock Island is also introducing, jointly with the Southern Pacific, the Arizona Limited service between Chicago and Phœnix, requiring two 7-car trains; and for service between Memphis and Amarillo the Rock Island has on order two Choctaw Rocket trains, of four cars each. The City of Miami of the Illinois Central and the South Wind of the Pennsylvania are two 7-car trains for the Chicago—Miami service. The Illinois Central has three other single- or double-car trains on order for minor services. For the New York—New Orleans service the Southern is building three 8-car trains, and a similar number for the service between Washington and Memphis; the Missouri Pacific's Dixie Eagle will be a 3-car unit running between Memphis and Tallulah. One particularly interesting introduction in 1941 will be of two streamlined " Electro-liners," of three cars each, to the high-speed interurban electric service of the Chicago, North Shore & Milwaukee Company, which has taken a fresh lease of life.

RESEARCH ON WELDED BRIDGE FAILURES

A summary of the results of investigations on certain failures of welded bridges

FAILURES which had occurred with welded bridges have been reported, and their probable causes discussed in these pages from time to time.[1] Until 1936 there were hardly any setbacks, provided the design of the welded structures and the welding itself were in the hands of experts. In that year, however, cracks were found in the girders of the underbridge carrying the German State Railway at Zoological Gardens station, Berlin, and subsequently the whole structure was replaced by a riveted bridge in 1938. The extremely cold winter of 1938 caused the cracking and fracturing of a bridge at Rudersdorf (near Berlin) carrying one of the German State motor roads, and a few months later the bridge over the Albert Canal at Hasselt in Belgium collapsed completely, an alarming incident which has been widely discussed all over the world. In January, 1940, further failures occurred in Belgium of a number of bridges of a design similar to that of Hasselt bridge (Vierendeel girders). Those who had watched the conspicuous progress achieved by the introduction of welding into bridge building have been eagerly following the discussions among metallurgists, designers, and structural engineers which aim at bringing to light the real reasons of these failures.

In this country welding of railway bridges is still in its early stages: Ladbroke Grove and Hainault bridges,[2] built in 1938 and 1939, are the first all-welded railway bridges to carry lines of the London Passenger Transport Board. So far these bridges have fully come up to expectations, both technically and economically, but further development of bridge welding will largely depend on research in general, and especially on the result of the investigation of the failures mentioned above. Results of the tests carried out by the Institute of Welding[3] were the more valuable as they were obtained on actual fragments brought to this country from the collapsed Hasselt bridge. Meanwhile, the institute has published further research reports on this subject, *viz.* on weldability and hardenability of low-alloy structural steels, devoting the latest number of its quarterly transactions to this subject, a significant fact which demonstrates the importance of the problems for the whole field of structural welding.

Fig. 1—Main girders of Rudersdorf bridge being loaded into barge for transport

Anxious to explain the failures of welded bridges, German experts have carried out an extensive series of examinations and tests. The results and the conclusions therefrom have been collected by Dr. R. Kuehnel, Chief Metallurgist of the German State Railway, in a comprehensive report.[5] Relating to welded bridges in Germany which failed, these results, like those of the Institute of Welding, revealed very important information.

In a previous article the dimensions and cross sections of the Zoological Gardens and Rudersdorf bridges were shown.[6] Two illustrations may give an idea of the considerable size of the main girders of Rudersdorf bridge, Fig. 1 showing the loading of these girders into steel barges which trans-

ported them from the workshop to the site, and Fig. 2 in which the welding of a girder can be seen. When it is reflected that these girders are 9 ft. 3 in. high, their flanges (bulge section) up to 1⅝ in. thick and 25 in. wide, and the total weight of the steel structure 6,300 tons, the importance of the failures may be realised, though they occurred in only

Fig. 2—Web weld of Rudersdorf bridge completed on site, flange welds still open

two of the main girders. The cracks started at the fillet welds of the lower flange and extended over the web, causing sudden fracture. It was found that depositing thin welds on thick flange plates which are apt to conduct off the welding heat very speedily was the real source of danger. For

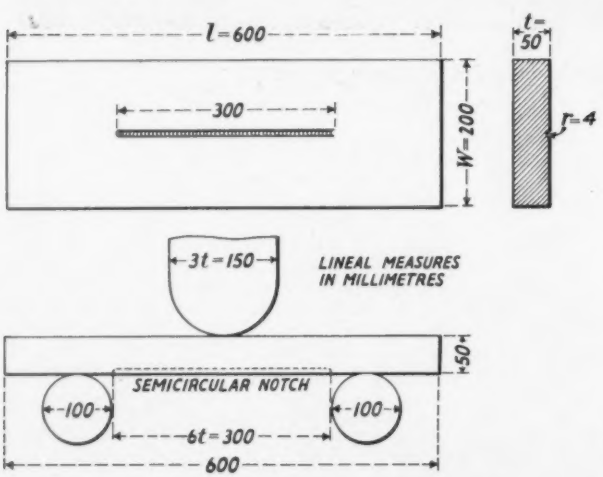


Fig. 3—Standard arrangement for groove weld bend test

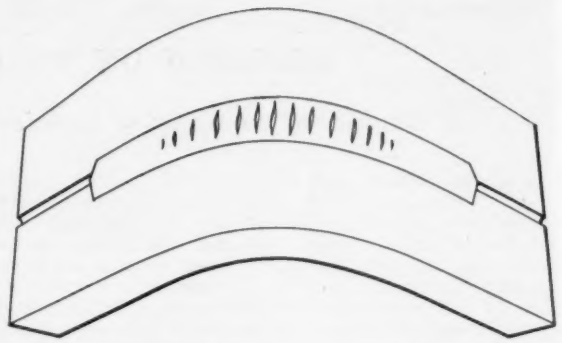


Fig. 4—Initial cracks with groove weld bend test on narmalised chromium-copper steel, bend angle 90 deg.

examination of the hardening zone caused by welding, a new bend test with notch welded specimens was introduced. Fig. 3 shows the standard shape and dimensions of the specimen, but the same method of testing was extended to modified specimens. While unwelded Steel 52 (of 33 tons per sq. in. tensile strength) of thicknesses up to 50 and 60 mm. (2 in. and 2⅜ in.) stands bending up to 180 deg. without cracking, notch-welded specimens of the same steel exhibited cracking after bending angles of 0 deg. to 10 deg. only. A specimen with its weld cracked is shown in Fig. 4, and the danger can be realised when these initial cracks extend into the parent metal.

Workshop tests on British steels of 28 to 33 tons per

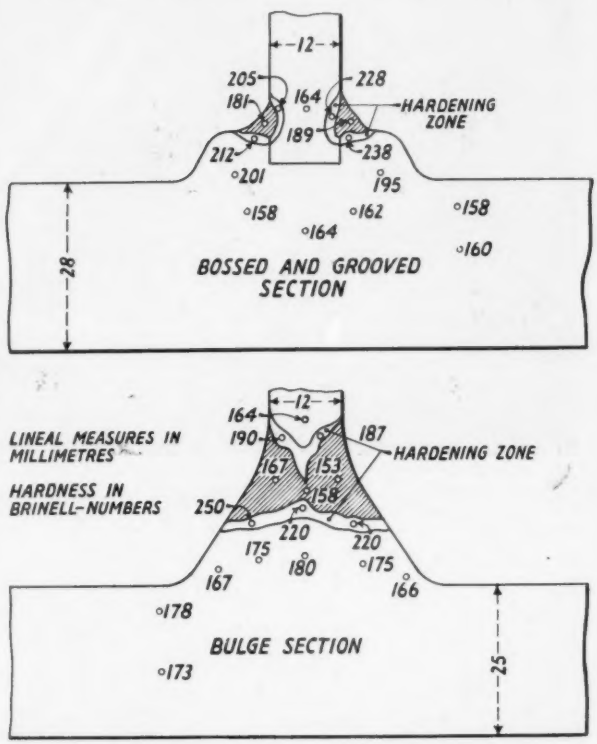


Fig. 5—Hardening zones with welded flange plates steel 52, (a) bossed and grooved section, (b) bulge section

sq. in. tensile strength, 1¼ in. thick, with similar specimens, confirmed that caution was necessary with thin welds on thick plates.[7] Fig. 5 shows the types of flanges generally used in welded railway bridges in Germany. It proves clearly that maximum hardening does not appear in the

deposited metal itself but in the bordering zones. Dr. Kuehnel's review may be summarised as follows:—

The steels of the Zoo and Rudersdorf bridges cracked, although they had, like the steel of the Hasselt bridge in Belgium, all the properties of common rolled steels of the respective qualities. The question to be answered, therefore, was how to develop new type of Steel 52 to withstand hardening and high stress concentrations. The results of special bend tests enable the examiner to judge the quality of the material, especially as to hardenability and weldability . . . There is no reason to doubt the sound behaviour of structures welded of Steel 52 or Steel 37. Up to thicknesses of 30 mm. (1 3/16 in.) all specimens showed sufficient ductility, but approaching a plate thickness of 50 mm. (2 in.), welded steel shows considerable hardening which greatly reduces its ductility. And if the type of the welded joint is such as to allow only for a limited compensation of stresses, the structure becomes endangered. It is necessary, therefore, to use a steel of extraordinary toughness, unless stresses can be relieved by pre-heating or annealing. For welded bridges and similar structures it is advisable to use a material which has received special heat treatment, *e.g.* normalising. Meanwhile, the production of Steel 52 and Steel 37 has been adapted according to the experience gained from the tests . . . Moreover, plate thicknesses of more than 30 mm. (1 3/16 in.) have been avoided in recent practice, and the designer of the structure has been anxious to use only favourable types of welded joints.

Several hundred all-welded railway and highway bridges have been in service in Germany for years without serious setbacks except those of the Zoo and Rudersdorf bridges. Neither in Germany nor in Belgium[8] have the failures altered the general attitude towards the application of welding. There is a feeling that these failures have stimulated research, with the beneficial result that the design of welded structures and their joints, welding methods, and the quality of the steels have been steadily and considerable improved.

(1) The Railway Gazette, May 20, 1938, p. 984; August 11, 1939, p. 207; March 8, 1940, p. 335; and June 14, 1940, p. 830.
(2) *Ibid*, November 8, 1940, p. 484.
(3) *Ibid*, June 14, 1940, p. 830.
(4) *Quarterly Transactions*, Institute of Welding, Vol. 3, No. 4, October, 1940.
(5) *Stahl und Eisen*, May 2 and May 9, 1940.
(6) The Railway Gazette, June 14, 1940, p. 830.
(7) O. Bondy, *Engineering*, October 11 and 25, 1940.
(8) The Railway Gazette, March 8, 1940, p. 335.

Not in the Blackout

A typical Indian night scene; depicting No. 43 up of the North Western Railway double-headed at Lodhran junction on the Karachi—Lahore main line. The locomotives are probably a 4-6-0 "HP," and a 4-4-0 "SP," the latter taking water and cleaning fire

Electrically-Cleaned Air.—Enough electrically-cleaned air to meet the normal breathing requirements of about 50,000 people is being supplied continuously to ventilate the newly installed 20,000-watt Westinghouse synchronous condenser at the Gorge steam plant of the Ohio Edison Company. More than 85 per cent. of all dirt particles are removed from the air by the 56 Precipitron cells before circulating through the windings at the rate of 40,000 cu. ft. per min. It is estimated that the air cleaners at the Gorge plant will annually collect between 50 and 75 bushels of air-borne dirt which might otherwise have been blown into the machine.

In the Precipitron cells, dirt is first charged with electrons as the particles pass fine platinum wires, about the size of human hair, which are charged to 10,000 volts. As the air continues between a series of parallel plates, the dirt is extracted by a 5,000-volt charge on the plates, just as a magnet draws up iron filings. After depositing its dirt in the cleaner, the air goes through the windings of the machine where it picks up heat. The hot air is exhausted out of doors in summer, and in winter is released inside the power station to heat the room. The electrostatic method has been successfully applied during the past two years to purify ventilating air for dwellings, offices, hospitals, laboratories, and so forth.

GREAT BLIZZARD IN NORTH EAST ENGLAND

How the L.N.E.R. overcame the most extensive railway dislocation in the country

JUST before dawn on Wednesday, February 19, a snowstorm began to sweep over North East England, to bring about the greatest dislocation of railway traffic ever experienced in this country. Snow continued to fall for 56 hours until midday on Friday, varying in depth from 1 to 4 ft., with drifts reaching a depth of 14 ft. Even by noon on the Wednesday, the blocking of switches and crossings by snow was impeding shunting. Telephone and telegraph wires began to break and poles to fall through the weight of the snow, and many lines were blocked as a result.

By Thursday morning communication had been so affected throughout that trains had to be worked on the time-interval system. The resultant slowness of movement caused trains to bunch together, and at one time later the same afternoon as many as eight trains were standing one behind another on some lines. At least 50 trains were at this time standing at different places waiting to proceed to Newcastle, the centre of the snowstorm, and unable to make any forward movement. In view of the severity of the conditions and the fact that there were 25 minor derailments it is remarkable that there was an almost complete absence of personal injuries, either to passengers or to the company's staff.

At one time on Thursday afternoon the East Coast main line and all alternative routes between Darlington and Newcastle were blocked. Steps were taken to terminate all trains from the south at Darlington and to stop the despatch of any further trains from Scotland; the through service to Scotland was provided by the West Coast route through the ready help of the L.M.S.R. Skeleton services were maintained on most branch lines, including an emergency steam service on the Tyneside electrified lines. Throughout Thursday afternoon and night and Friday morning the slow process continued of disentangling the trains and bringing them to some station at which the passengers could detrain. It was realised early on Thursday that serious delays to trains were inevitable, and an organisation was set up to get food delivered to stranded passengers, particularly to those held up in positions difficult of access to the south of Newcastle.

Goods and mineral traffic throughout the area affected was practically at a standstill on Thursday and Friday, and in addition to the main line and principal alternative routes between Darlington and Newcastle, no fewer than 32 branch lines were blocked and 37 different passenger train services were entirely disorganised.

Meanwhile the permanent way staff were working under appalling conditions and endeavouring to release trains blocked in the snow and to keep open access to the principal stations. Ten pairs of snow ploughs were at work on 20 different branches. About 1,000 soldiers lent their aid to the railway staff for several days clearing the lines. The complete lack of ordinary methods of communication made it impossible to ascertain the exact location of trains, but it was possible to keep a general check on the position by comparing the number of trains which had left Darlington with the number which had reached Durham or other places to the north by the different routes. The only means of communication available were two emergency trunk telephone lines which the Post Office placed at the disposal of the L.N.E.R.

Roads became as impassable as the railways, and Mr. C. M. Jenkin Jones, Divisional General Manager, N.E. Area, describing the experiences of a party which set out to get food and drink to the passengers of three trains stranded south of Durham after 18 buses sent to fetch the passengers into Newcastle had failed to reach them, said:

"A 4-ton motor left Newcastle with a crew consisting of a cartage clerk in charge, 2 motor drivers, 4 checkers and a loader; and also a 2-ton motor with one motor driver for emergencies. The 4-ton lorry carried sandwiches, pork pies, biscuits, cakes, tea and milk for 600 passengers; the party was armed with picks, shovels, chains and mats, and instructed to find the trains at all costs.

"At Low Fell, 3 miles south of Newcastle, the 4-ton lorry ran into a snowdrift and the crew dug it out; they then came up against a derailed and snowed-up tram which they helped to re-rail and get on its way—and out of theirs. A quarter of a mile further on they found a bus across the road; they dug it out and with the help of their mats got it on its journey. They reached Durham—a total journey of 14 miles—at 6.45 p.m. after 4½ hours hard going. Here they got their first news of one of the trains one mile further south. The 2-ton lorry was then sent back to Newcastle where it arrived at 9.40 p.m.) to report that the trains had been located. The 4-ton lorry finding the direct road to the train blocked by three stranded buses and two army lorries, made a detour, and by 7.15 p.m. reached a farm, the nearest point accessible by motor, half a mile away from the train which had left King's Cross at 10.25 on the previous night.

"The party then waded across fields through half a mile of snow waist deep, going to and fro carrying the food to the train and sliding the hampers down the embankment. The urns of tea—of course stone cold—and milk were too heavy to carry, but the men were not to be defeated: they borrowed suitable receptacles from the farm and got the liquids as well as the solids to the train. By 9.0 p.m. they reached the second train, the 8.20 p.m. from King's Cross on the previous day, and delivered food and drink to the passengers. The third train, the 10.5 a.m. from York, was discovered 1¾ miles further south, and supplies of food and drink were eventually delivered to this train, also with the help of the station staff at Durham. The lorry, with its eight men, set out on its return journey at 12.30 a.m. and got back to Newcastle shortly after 2.0 a.m., 12 hours after it had set off. The resource and determination of the men concerned were beyond all praise; but they are only typical of the spirit and devotion shown in this great emergency by all members of the staff within the limits of their opportunities."

Many further instances could be told of the resourcefulness of the railway staff in coping with an unprecedented situation, and of their efforts to alleviate the discomforts of passengers through the isolation and delay brought about by the snowstorm. Some journeys took well over 24 hours, and four trains, which left King's Cross for Newcastle at 7.15, 8.20, 10.15, and 11.30 on the Wednesday night did not reach Newcastle until 12.38 a.m., 9.25 a.m., 10.37 a.m. and 12.12 p.m. the following Friday.

The work of repairing the damage began on Friday, February 21, and was considerably hampered by a hard frost which came on the heels of the snowstorm and was followed by floods through melting snow. In order to avoid the loss of any hours of daylight six special trains were brought into use with feeding and sleeping facilities to house the Engineer's repair staff on the site of their work. The other areas of the L.N.E.R. assisted with men and materials, and in addition ungrudging help was received from the L.M.S.R. and the Royal Corps of Signals. Such excellent progress was made that within five days of the outbreak of the snowstorm, the main line was working at 70 per cent. of its normal capacity.

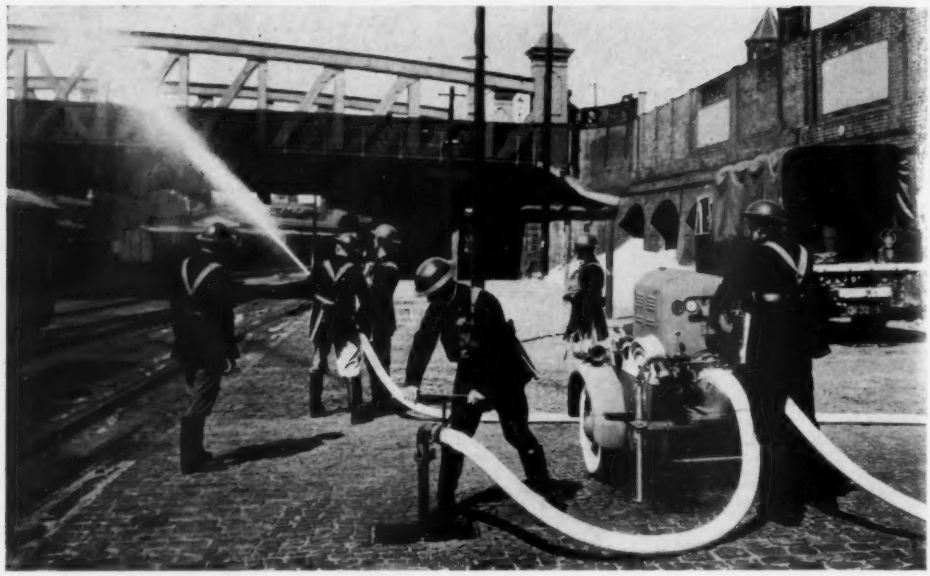
Argentine Railway Staff Gift to Bombed Areas

A gift of £2,000, sent to London on March 18 for the purchase of ten mobile kitchens for the bombed areas, brings up to 25 the total number of kitchens provided by the staffs of the Buenos Ayres Great Southern, Buenos Ayres Western, and Buenos Ayres Midland Railways.

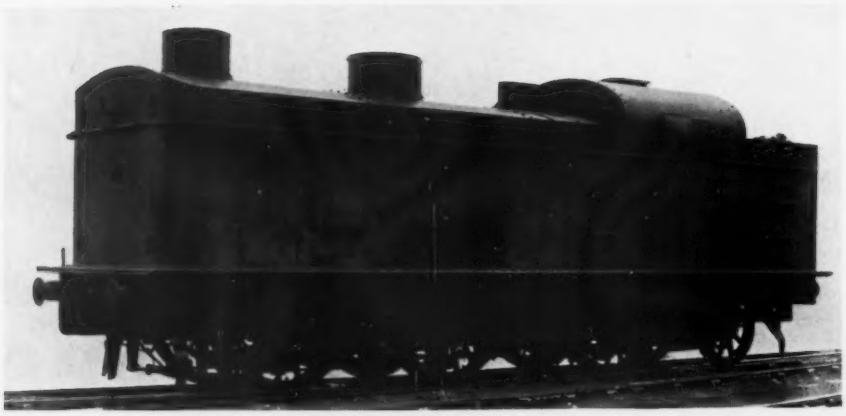
L.N.E.R. double-headed express near Crowden, Derbyshire. The overhead equipment for the electrification of the Sheffield—Manchester main line may be observed

[*Photo*] ["*Manchester Guardian*"

British Railways and the War—63



Above: Trailer-pump fire practice by members of the G.W.R. fire brigade at Paddington



Left: Ivatt "N1" 0-6-2 tank armoured for coast defence train in 1914

L.M.S.R. stationery reclamation depot. Left: Dealing with incoming paper prior to sorting. Middle: Extracting pins from old files. Right: Sorting and classifying stationery. (See page 376)

RAILWAY NEWS SECTION

PERSONAL

INDUSTRIAL & EXPORT COUNCIL

The following additional members have been appointed to the Industrial & Export Council :—

Lord Portal, D.S.O., M.V.O., Parliamentary Secretary, Ministry of Supply.

Mr. George Tomlinson, M.P., Parliamentary Secretary, Ministry of Labour.

Sir Nigel Campbell, Deputy Chairman, Stewarts and Lloyds Limited.

Mr. Charles Dukes, General Secretary, National Union of General & Municipal Workers.

Mr. C. U. Peat, M.C., M.P., Parliamentary Private Secretary to the President of the Board of Trade.

Mr. M. Watkins, Managing Director, John Lewis Limited, London.

These members have consented to serve also on the Committee of the Council, which, as announced by the President of the Board of Trade, on March 4, has been appointed to assist in the concentration of industries. The following members of the Council are also members of the Committee : Mr. F. D'Arcy Cooper; Mr. S. R. Beale; Lord Forres; Mr. M. Hodgson, O.B.E., J.P.; Sir Cecil Weir, K.B.E., M.C.

HERBERT JACKSON PRIZE

The L.M.S.R. announces that the Herbert Jackson prize for 1940 has been awarded to Mr. S. C. Britton, of the Metallurgical Department (Engineering Section), Derby, for his paper entitled "The Corrosion of Copper and some Copper Alloys in Atmospheres highly polluted with Coal Smoke."

Mr. Abraham Thomas James, K.C., Chairman of the South Wales Traffic Commissioners, whose death we recorded in our January 10 issue, has left estate valued at £29,979.

Colonel E. J. Woolley, Chairman, Grand Union Canal Company, is engaged on military duties and has resigned the chairmanship, although retaining his seat on the board. Mr. John Miller has been elected Chairman in Colonel Woolley's place.

THE INSTITUTION OF CIVIL ENGINEERS

Transfer from Associate Member to Member :—

Mr. Ernest George Horton, B.Sc. (Eng.), District Engineer's Office, L.M.S.R., Northampton.

On March 20 a luncheon, presided over by Lord Stamp, was given to Mr. Ashton Davies by his friends and colleagues to commemorate his completion of 50 years of service with the L.M.S.R. and its constituent companies. Those present at the luncheon were as follow :—

Lord Stamp (Chairman), Sir Ernest Lemon (Vice President), Messrs. G. Royde Smith (Secretary), A. Eddy (Chief Legal Adviser), G. L. Darbyshire (Chief Officer for Labour & Establishment), H. V. Mosley (Chief Officer for New Works & Parliamentary Business), T. E. Argile (Chief Commercial Manager), T. W. Royle (Chief Operating Manager), W. K. Wallace (Chief Civil Engineer), W. A. Stanier (Chief Mechanical & Electrical Engineer), C. E. Fairburn (Deputy Chief Mechanical & Electrical Engineer), G. Morton (Chief Accountant), W. H. C. Clay (Estate Manager), S. J. Symes (Chief Stores Superintendent), A. E. Towle (Hotels Controller), A. F. Bound (Signal & Telegraph Engineer), and Captain J. W. Harris (Marine Manager).

Elliott [*& Fry*

Mr. Ashton Davies, C.V.O., O.B.E.

Vice-President, L.M.S.R., who has completed fifty years of service with the L.M.S.R. and its constituent companies

Both Lord Stamp and Sir Ernest Lemon paid very high tributes to the valuable service which Mr. Ashton Davies had rendered during the past half century and especially during the war of 1914-19 and in the present war.

Mr. Ashton Davies was born in 1874 and began his railway career in 1890, serving first in the Telegraph Department of the Lancashire & Yorkshire Railway. Later he was transferred to the Passenger Superintendent's Office, where ultimately he became Personal Assistant to Mr. Chas. J. Nicholson, the Passenger Superintendent. This position he held under four Superintendents, and was associated during that time with many important railway schemes and developments which included the establishment of the train control system at Manchester. While attending lectures on economics at Manchester University, Mr. Ashton Davies obtained one of the first scholarships given by the Directors of the Lancashire & Yorkshire Railway Company. He took a prominent part in the establishment of a School of Signalling by his company in Manchester, and for some years lectured therein. In 1919, on the appointment of Sir Arthur Watson to succeed Sir John A. F. Aspinall as General Manager of the Lancashire & Yorkshire Railway, Mr. Ashton Davies was appointed Superintendent of the Line. On the amalgamation of the London & North Western and the Lancashire & Yorkshire Railway Companies as from January 1, 1922, he became Divisional General Superintendent (Northern Division), London & North Western Railway; from January, 1923, General Superintendent, Western Division, London Midland & Scottish Railway; from January 1, 1924, General Superintendent (Freight Services); in August, 1924, General Superintendent (Passenger Commercial); and from October 1, 1931, Passenger Manager of the London Midland & Scottish Railway. As from October 1, 1932, Mr. Ashton Davies was appointed Chief Commercial Manager, L.M.S.R., responsible for both goods and passenger commercial work. By this appointment the executive of the L.M.S.R. vested in one commercial officer the responsibility for the whole of the company's organisation for dealing with the public on all phases of its goods and passenger business, including mineral traffic, and for the initiation of all arrangements and facilities for the conveyance, development, and co-ordination of the company's traffic. The Chief Commercial Manager is in fact a service and sales manager, directing the activities of all the area commercial officers throughout the system, and, subject to the Vice President (Railway Traffic, Operating & Commercial), carries out the commercial policy of

the company. It is his special province to gauge the requirements of the traders and the public, and to see that these requirements are met. In June, 1938, Mr. Ashton Davies was appointed Acting Vice President (Railway Traffic, Operating and Commercial), and subsequently to the position of Vice President, which he now holds. On a number of occasions Mr. Ashton Davies has been Chairman of the Railway Clearing House Coaching Traffic Superintendents' Conference and of the Railway Goods Managers' Conference. In addition, he has been Chairman of the Railway Statistics Committee, and a member of the Common User of Wagons Committee. In 1927 Mr. Ashton Davies took a prominent part in the preparation of the railway case for submission to the Railway Rates Tribunal, constituted by the Railways Act of 1921, in connection with the review of passenger train rates and fares, and also in connection with the railway Road Transport Acts of 1928. He represented the L.M.S.R. in negotiations conducted with numerous passenger road transport undertakings with which the company is now allied, and is Deputy Chairman of the Ribble Motor Services Limited. Mr. Ashton Davies was a member of a committee of railway officers which prepared information for submission to the Royal Commission on Transport. He has lectured on different phases of railway transport and for a paper on the co-ordination of transport, given in 1930 before the Institute of Transport in London, received the institute's gold medal for that year. Mr. Ashton Davies is a foundation member of the institute's council.

We regret to record the death on March 14 of Dr. Alexander Campbell, O.B.E., LL.D., at the age of 71. Dr. Campbell was Chairman of the Hunslet Engine Co. Ltd. and was prominently identified with Leeds University. At one time he was Chairman of Leeds Engineering Employers' Federation

---

Mr. David Cooper, General Manager, Glasgow & South Western Railway, from 1894 to 1922, has left estate valued at £37,006. We published a portrait and biographical notice of Mr. Cooper in our November 8, 1940, issue.

We regret to record the death of Mr. Lauchlan Alexander Hamilton, at the age of 88, in Toronto on February 11. Mr. Hamilton was born at Penetanguishene, Ont., and went west at the age of 19 as a member of the staff of the International Boundary Commission which fixed the border between Canada and the United States. He joined the Canadian Pacific Railway Company at the invitation of Sir William Van Horne, and became associated with Lord Strathcona, Lord Mountstephen, and other Empire builders, who built this transcontinental line. Mr. Hamilton was appointed General Land Commissioner of the Canadian Pacific Railway and laid out a number of cities.

Mr. P. A. Clews, European Manager, Canadian National Railways, has been elected first Vice-President of the Canadian Chamber of Commerce.

Mr. C. F. de Pury, Western Divisional Superintendent, Southern Railway, who, as recorded in our March 7 issue, has been appointed Southern Divisional Superintendent, Southampton, joined the London, Brighton & South Coast Railway in 1912, and served in the Superintendent of the Line's office until August, 1914. In 1919 he was placed in charge of the passenger claims section, and at the time of grouping was transferred to the Chief Operating Superintendent's office. He was appointed Assistant for the Commercial & Operating departments in the Isle of Wight in 1925. In May, 1930, he became Assistant to the London (West) Divisional Superintendent, and in July, 1933, was appointed Assistant Superintendent of that division. In March, 1936, Mr. de Pury was made Western Divisional Superintendent, Exeter Central, from which position he is now promoted to be Southern Divisional Superintendent, Southampton. Mr. de Pury was mobilised with the Artists' Rifles in the last war, and served in France and Germany in the Royal Fusiliers and Railway Transport Establishment.

Mr. C. F. de Pury

Appointed Southern Divisional Superintendent, Southampton, Southern Railway

Mr. G. Bishop

Appointed Western Divisional Superintendent, Exeter Central, Southern Railway

---

Mr. G. Bishop, Assistant Divisional Superintendent, Southern Division, Southern Railway, who, as recorded in our March 7 issue, has been appointed Western Divisional Superintendent, Exeter Central, joined the staff of the South Eastern & Chatham Railway in 1900. He served at various stations and on the relief staff, and in 1910 was transferred to the Train Running Department, Superintendent of the Line's department. In 1912 he was transferred to the staff of the London District Traffic Superintendent, becoming Chief Clerk in 1916. He was promoted to be Assistant to the Northern District Superintendent in 1917, and, after grouping, went to Dover as Assistant Eastern Divisional Commercial Manager, Southern Railway. He returned to London in April, 1930, to become Assistant London East Divisional Superintendent, and in April, 1936, was appointed Assistant for Rates & Fares, Commercial Superintendent's office. Mr. Bishop was appointed Assistant Divisional Superintendent, Southern Division, in January, 1939. Since the outbreak of war, he has been acting as Railway Liaison Officer to the Southern Command headquarters, on behalf of the four main-line railways.

PRESENTATIONS TO MR. C. J. SELWAY AND MR. F. R. POTTER

At a meeting of the Railway Clearing House Superintendents' Conference held on March 19 presentations were made to Mr. C. J. Selway (who recently retired from the position of Passenger Manager, Southern Area, London & North Eastern Railway Company) of a silver tray, and Mr. F. R. Potter (on his retirement from the position of Superintendent of the Line, Great Western Railway Company) on a canteen of cutlery.

Mr. Perts (Southern Railway), Chairman of the conference, presided, and stated that it was always a matter of regret to members of the conference to lose the co-operation of colleagues. He referred to the fact that Mr. Selway had been a member of the conference for 26 years, occupying the chair in 1921, 1929, 1936, 1937, and 1938. During a period of over a quarter of a century his power of analysis had been of great help

to the members in unravelling the many difficult problems which had arisen and the thanks of all concerned were extended to him for the assistance he had rendered to the railway companies. As regard Mr. Potter, he was appointed a member of the conference in April, 1931, and was Chairman in 1939 and 1940. Mr. Perts referred to Mr. Potter's genial manner and happy disposition which were appreciated by the members of the conference, and to his valuable help in the deliberations of the conference, for which he was asked to accept the thanks of all his old colleagues. The Chairman also expressed the hope that both Mr. Selway and Mr. Potter would have many years of good health and happiness. Mr. Barrington-Ward spoke of the help which Mr. Selway and Mr. Potter had always willingly given in business matters, and in thanking them on behalf of the Operating Superintendents wished them both a long life and happy future.

Mr. Ashton Davies (Vice-President L.M.S.R.) made the presentations and said he felt it a great privilege to have been given this opportunity of paying his personal tributes to both Mr. Selway and Mr. Potter. He had always admired the extensive knowledge of railway matters shown by Mr. Selway, who had had the unique experience of occupying the chair for three consecutive years. Mr. Ashton Davies tendered to Mr. Selway his good wishes with the hope that he would have many years in which to enjoy good health and happiness, and stated that Mr. Selway, in severing his connection with the conference, could rest assured that the services he had rendered to the railway companies were much appreciated. Mr. Ashton Davies, in referring to the valuable help Mr. Potter had given in railway business, stated that it brought back memories of the distinguished career of his father who was General Manager of the G.W.R. during the last war, and said this was indeed the case of a worthy son of a worthy father.

Mr. Selway, in accepting the gift, thanked the members of the conference for the kind sentiments expressed. He said it gave him much pleasure that Mr. Ashton Davies was able to be present, as he had had the closest business associations with him over many years. He also expressed his appreciation of Mr. Perts's clarity of vision in the deliberations of the conference. Mr. Selway also thanked Mr. Barrington-Ward for the kind sentiments he had expressed on behalf of the Operating Superintendents. He stated that during his membership of the conference he had taken part in countless presentations and felt sad now at having to sever his connections with many old associations particularly at such a time as this when one feels that one is not at liberty to enjoy to the full the relaxations hoped for. Nevertheless he felt he was carrying away with him the good wishes of the many friends he had made and, in thanking Mr. Ashton Davies and the members of the conference for the gift, said he looked upon it as cementing these friendships and that it would remain an ever-present reminder of those happy associations.

Mr. Potter expressed his thanks for the gift and for the expressions of goodwill which accompanied it; also for the kindly references to his father. He regretted that considerations of health had forced him to accept retirement from the service of the G.W.R. at this time and he extended his best wishes to all those left to carry on the work of the conference in the difficult times through which all are now passing.

Staff & Labour Matters

Registration for Employment Order

The Minister of Labour & National Service has now issued the Registration for Employment Order, the purpose of which is to enable a survey to be made of the available labour force in the country with a view to selecting those who are likely to be useful to the war effort, whether they are in employment or not. For those in employment the question is whether they can more usefully be employed on some other more essential work. The needs of the Armed Forces, including the women's services attached to the Forces, and the programme of the production departments are such that very large numbers of men and women are required. On the other hand, the numbers of unemployed registered at employment exchanges who can properly be regarded as suitable and available for new work are now so low that new sources of supply must be looked for.

Women are excluded from the Order whilst actually rendering paid whole-time service with the Armed Forces in the W.R.N.S., the A.T.S., the W.A.A.F., or in the various nursing services. On leaving such services they will, however, be required to register if they are in a class of persons which has already been called upon to register.

Men already registered under the Armed Forces Act will not be required to register again, but further particulars may be obtained from those of them who have not been called into the Armed Forces if and when such particulars are required for the purpose of selecting men for transfer to more essential work than they are doing.

Registrations under the Order will start during April. The first age groups to be registered will be men of ages 41 and 42 and women of ages 20 and 21. In the case of the men of these ages, it is proposed to exclude from the requirement to register very considerable numbers of men who are already engaged in certain specified industries. By this means, it will be possible to register the two age groups on one day and this will be done on April 5. In the case of the women aged 20 and 21, it will be necessary to have two registration days, the first of which will be April 19. The second registration day will follow very shortly on a date to be announced later.

As the registration of men between the ages 18 to 40 inclusive is to be left to be done under the Armed Forces Act, registrations under this new Order between the ages of 18 and 40 inclusive, will apply only to women. In deciding the stages by which women are to be called upon to register and in settling the principles upon which after registration women will be allocated to work, the Minister will have the advice of the Women's Consultative Committee.

Fire Prevention Order

In a foreword to an explanatory memorandum issued by the Ministry of Home Security, Mr. Herbert Morrison states that there has been a very great improvement in our defence against air raids. Since the introduction of the Order no raid has succeeded on anything like the scale of those which preceded it. In the residential areas the response of the public has been very striking. In business and industrial areas too the scheme has saved the lives of thousands of persons in the areas attacked as well as many millions of pounds worth of national assets vital to the war effort.

He states that there has been a certain amount of misunderstanding as to the order, and discussions have taken place with representatives of the Trades Union Congress, the British Employers' Confederation, the Federation of British Industries, and the Association of British Chambers of Commerce. While there were points of criticism, discussion with these bodies took place in a spirit of friendly co-operation and goodwill. Both parties realised that in introducing the compulsory principle the Government was not concerned with protecting private property as such on easy terms, but with finding methods for preserving the great machine of civil life and production upon which our whole war effort depends. The surest way of achieving this successfully is by co-operation between those—management and workers alike—whose daily work is done at the places which have to be defended.

"I know it is asking a lot to expect the worker to leave his family and forego his rest or to sacrifice some of his precious weekend, and I very much regret that it has to be done. It would take well over a million men to man an efficient full-time service, and they just are not there. I want employers also to realise this: I emphasise very strongly the importance of their seeing that their fire watchers have the amenities which are laid down in the memorandum and are so necessary to those performing these duties. If they can do more I hope they will," says Mr. Morrison.

The Government does not desire to upset any negotiated arrangement which is working satisfactorily, or to hinder similar negotiations in future. On the contrary it lays particular stress upon the value of joint negotiations at the planning stage between the parties concerned, each properly represented and able to express its point of view freely.

TRANSPORT SERVICES AND THE WAR—83

Lost war equipment in London—More L.N.E.R. catering—National Expenditure Committee on coal and wagon shortage—L.M.S.R. stationery reclamation depot

At present there is an epidemic of lost property, particularly respirators (gas masks) and steel helmets. In September last as many as 3,000 articles of this kind were lost in a single week on London Transport vehicles alone. In November the number had fallen to below 1,000 and in January to about 350. Now the number is rising sharply again as shown by the following figures, which relate to war equipment only, received at the London Transport lost property office during ten recent weeks :—

Week ending	Articles of war equipment
January 11	391
,, 18	400
,, 25	423
February 1	494
,, 8	640
,, 15	699
,, 22	803
March 1	716
,, 8	974

Respirators left on London Transport vehicles which bear no indication of their ownership are returned to the Ministry of Home Security after seven days ; they should therefore be claimed promptly from the board's lost property office adjoining Baker Street station. If it is not convenient to call personally, the board will post the masks to the owners on payment of a small fee. A poster appeal is now being made by the main-line railways and London Transport to the increasing number of travellers who are leaving their personal property in public vehicles, asking that all respirators should be marked with the name and address of the holder.

Additional L.N.E.R. Buffet Trains

In the early part of the present year additional buffet cars were put in service on the L.N.E.R. Beginning on January 20, refreshment service was restored for the first time since the beginning of the war (save for the daily through restaurant car train from Newcastle to Glasgow and back) between Edinburgh and Glasgow, on four trains in each direction daily ; Edinburgh and Perth, on two trains in each direction daily ; and Edinburgh and Carlisle, on one train each way daily. An additional buffet car was put in service between Leeds, York, and Newcastle, once daily each way. A fortnight later the Liverpool (Central)—Sheffield—Hull buffet service was doubled, two trains each way now having this equipment ; a car was also introduced between Yarmouth (Vauxhall) and Liverpool Street *via* Norwich and Cambridge, making the double journey daily ; and another was put on to semi-fast service from Grantham to King's Cross and back. A further novelty, from the same day, was the provision of both restaurant and buffet car service on the 1 p.m. from King's Cross to Edinburgh and the 1.5 p.m. from Edinburgh to King's Cross. These new services are in addition to the new cross-country buffet car trains recently put into commission between Ashford (Kent) and Newcastle, and Colchester and York. Including the last-mentioned, a total of 13 additional buffet cars has been required to provide for all the new services mentioned, and 91 L.N.E.R. trains now run daily with buffet cars attached, as well as 57 restaurant car trains, and four more of the latter to and from the L.M.S. line with L.M.S.R. cars—a total of 152 L.N.E.R. trains daily on which meals and light refreshments are obtainable.

L.N.E.R. RESTAURANT & BUFFET CAR TRAINS, MARCH, 1941

Section	Between	Restaurant Car Trains	Buffet Car Trains
E. Coast	King's Cross—Edinburgh	4	2
,, ,,	,, —Newcastle	8	—
,, ,,	,, —York	1	—
,, ,,	Newcastle—Edinburgh—Glasgow	2	4
G.N.	King's Cross—Leeds	10	—
,,	,, —Hull	2	—
,,	,, —Grimsby—Cleethorpes	—	2
,,	,, —Grantham	—	2
G.C.	Marylebone—Leicester—Manchester	—	6
,,	Liverpool—Manchester—Sheffield—Hull	—	6
,,	Ashford (Kent)—Nottingham—Newcastle	—	2
G.E.	Liverpool Street—Norwich	8	—
,,	,, ,, —Ely	6	—
,,	,, ,, —Yarmouth *via* Cambridge	—	2
,,	,, ,, —Clacton and Walton	2	4
,,	Colchester—March—York	—	2
N.E.	Leeds—York—Newcastle	2	4
,,	Hull—York	—	4
,,	,, —Leeds—Liverpool (Lime Street)	2*	2
,,	Newcastle—Leeds—Liverpool	4†	—
,,	,, —Middlesbrough	—	25
,,	,, —Carlisle	—	8
N.B.	Edinburgh—Aberdeen	8	2
,,	,, —Glasgow	—	8
,,	,, —Perth	—	4
,,	,, —Carlisle	—	2
,,	Glasgow—Fort William	2	—

* L.M.S.R. cars. † Includes two L.M.S.R. cars.

Note :—Certain of the above cars are provided on part only of the itinerary indicated

The Coal and Wagon Shortage

The 8th report of the 1940-41 session from the Select Committee on National Expenditure was made public on March 23. The select committee was established by Parliament shortly after the outbreak of war for the purpose of examining current expenditure defrayed out of monies provided by Parliament for the Defence Services, for Civil Defence, and for other services directly connected with the war, and to report what economies consistent with the execution of the policy decided by the Government might be effected. The 8th report, which deals with coal supplies and stocks, is the 22nd report in the series which the Select Committee has issued. This investigation was conducted by a sub-committee on transport services, the report of which has been considered and adopted with amendments by the select committee. The text of the report is as follows :—

The sub-committee has had under review the urgent matter of the shortage of coal supplies and stocks which persists in many parts of the country. This is a repetition of a similar shortage which occurred during last winter, upon which certain recommendations were made in the ninth report of last session's committee (H.C. No. 149, 1939-40). Serious complaints have been made in various quarters that the shortage is due largely to the insufficient number of railway wagons where needed and the failure to make adequate use of those which are available. In so far as this criticism is directed against the railways, it must be remembered that they are operating under many and abnormal difficulties. For obvious reasons a great deal of traffic has been redistributed, so that a heavy burden has been thrown upon the lines serving certain parts of the country; in addition, some traffic which formerly travelled by coastwise shipping or by road has been diverted to the railways. A certain amount of temporary dislocation has been caused by enemy action, and it is but right to acknowledge the praiseworthy promptitude with which difficulties of this nature have been overcome. Apart from these factors, there are the inevitable difficulties which the railways have had since the beginning of the war, in the enormously increased number of special trains carrying troops and supplies, often proceeding at short notice and over unaccustomed routes, and the complications involved in working with reduced lighting and inadequate staffs. These observations suffice to indicate the strain on railway resources at a time when, even if operations could proceed normally, a much heavier traffic is having to be carried.

One result of the abnormal difficulties which the railways have had to face is that large numbers of coal wagons have been immobilised at various stages on the journey empty to the pit, and on the journey back from the pit to the consumer; the shortage of wagons caused by these delays on the railways has been aggravated by the retention of wagons

for lengthy periods in traders' and merchants' sidings. While the sub-committee realises that in some industries it is not easy to arrange for the unloading of full wagons immediately on arrival, they consider it essential in the national interest that traders should unload their wagons with all possible speed, and not use them as a convenient form of temporary storage accommodation. Government Departments are themselves not free from blame in holding up wagons. The sub-committee therefore recommends that more drastic steps should be taken generally to secure the earlier release of wagons, and to provide labour for unloading where a shortage prevails.

In the spring of 1940, detailed plans had been made by the Mines Department and the railways, acting in co-operation, to convey large quantities of coal during the summer months to various parts of the country, where they could be accumulated in dumps for use during the following winter. One step taken was the running of a large number of additional trains to convey coal from the northern to the southern part of England. At that time the mines were working at full pressure to provide not only the requirements of this country, but the needs of France, and other countries, as well. The overthrow of France and other countries and the entry of Italy into the war suddenly curtailed, by many million tons per annum, the quantity previously being exported. One obvious result followed, namely, a lessened demand from the pits on the north-east coast and in South Wales, with resultant unemployment in those mining areas. These events, therefore, necessitated a drastic modification of the plans made a few weeks earlier, and some of the difficulties already referred to made it necessary to recast the plans made for coal distribution. It had been intended to create coal storage dumps aggregating a considerable tonnage, which were to be ready to augment if necessary the supplies normally available for winter consumption. In fact, only about half the planned quantity was stacked at dumps. Far greater efforts are needed at once to create stocks during the coming months if next winter's supplies are to be assured.

Although it cannot be said that the shortage of coal supplies in various parts of the country, and particularly in the southern half of England, has caused serious hardship, it has undoubtedly been no easy matter to provide either industrial or domestic requirements in full. There has been, and still is, much living from hand to mouth, so far as coal supplies are concerned. At the same time, pits have been closed down altogether, at least for the time being, through shortage of labour, while in other districts there is still considerable unemployment among miners. The sub-committee was informed that attempts were being made to secure a more efficient distribution of the mining population, but it was emphasised that it is proving very difficult to persuade miners in one district to transfer to another. Apart from the difficulties associated with housing and the disruption of family life, many miners object to working under conditions with which they have not hitherto been familiar. Some prefer to work in cold pits, others in hot, some in deep pits, others in shallow, and so on. It is an undoubted fact that the present coal requirements in this country are steadily increasing, and will still further increase in the future, while the difficulties of distributing supplies are not diminishing. The sub-committee accordingly considers that the problem of the transfer of labour should be tackled resolutely, and if necessary the powers of compulsion now at the Government's disposal should be used.

It is clear that the problem of distributing coal from the pits to the places where it is needed will remain one of no little difficulty, and the sub-committee is strongly of the opinion that, notwithstanding the efforts which have been made hitherto, this problem will be found incapable of solution unless far more drastic action is immediately taken. It believes that it may be necessary, for example, after due notice to the public, to withdraw a number of passenger trains on specified days, to enable coal trains, and possibly other urgently needed industrial traffic, in particular that to and from the ports, to have uninterrupted use of the railway tracks, and it recommends that immediate attention should be given to this suggestion. Such action has been taken in Germany and Italy and enemy-occupied territories. Later in this report the sub-committee refers to road and canal developments which may help towards a solution of the problem.

Enough has been said to show that the difficulties of coal distribution are not likely to be resolved easily. It is therefore with some apprehension that the sub-committee contemplates the possibility of large numbers of men being called up from the railways and mines for active service with the armed forces. It desires to point out the need for great caution in this respect, if the country's growing requirements of coal are to be met, and if the greatly increased volume of traffic on the railways is to be handled promptly and efficiently. Quick transport, always important, may become a vital necessity. It would be disastrous if exceptional efforts made at factories to secure the production of urgently needed goods were wasted through delays in getting factory products transported to destinations at which they were urgently required. Such delays, which might have a serious effect on the country's war effort, must at the least interfere with production, raise costs, and cause inefficiency and waste. It cannot be too strongly urged that, unless imperatively necessary, neither mines nor railways should be denuded of essential employees so long as abnormal difficulties in the coal and transport industries continue and may possibly be accentuated.

The difficulties which war conditions have placed in the way of securing an adequate distribution of coal to all districts can to some extent be met by diverting coal trains from their usual destinations, and supplying consumers in certain districts from pits from which coal may be more conveniently transported in present circumstances, than their usual sources of supply. The adoption of this expedient creates its own problems, for which so far no adequate solution has been found, since it is obvious that a longer haul may involve an increased price to the consumer, who may also be asked to accept coal of a different quality and price from that to which he is accustomed. This increased cost will presumably be borne by the consumer, although eventually, in the case of coal used for industrial purposes, the bulk of the burden will be transferred, through contract costs, to the Exchequer. Already there has been a substantial increase in the selling prices of industrial coal, with a consequential increase in the cost of production of almost all munitions of war, and also of all goods being manufactured for export, thus adding to the difficulties of those export industries, the expansion of whose output it is vitally important to encourage. There is, therefore, here another problem which in the opinion of the sub-committee urgently needs solution and it understands that proposals to solve it are nearing completion and will shortly be submitted to Parliament. It also considers that it may be necessary, in order to secure as cheap and efficient a distribution of coal as possible, and the assurance of adequate supplies where they are most needed, to reduce, where practicable, the number of the different grades supplied to merchants and consumers.

Co-operation of Coal Merchants

The sub-committee is not satisfied that the first recommendation in the committee's ninth report of last session has been given full attention. The sub-committee recommends that small merchants should be compelled to adopt co-operative schemes of coal storage and distribution. It now goes further and recommends immediate exploration of the following suggestions:—

(*a*) That merchants should endeavour to co-ordinate the requirements of their customers so that collective orders, possibly for train loads for their districts, should be placed with one or more colliery owners for coal, and with gas companies for coke.

(*b*) That merchants' stocks should be pooled.

(*c*) That merchants should create their own pool of labour at the sidings and dumps.

(*d*) That merchants' transport lorries should be pooled, thus saving labour and petrol.

During the next few months many new factories, now building, will be completed and put into operation, while others are being extended. In the areas where this is taking place there will be a largely increased demand for coal, both

at the factories themselves and at the electric power stations from which many of them will derive their power supplies. In one area in particular many new factories will be coming into operation. There it is impossible even to supply present requirements from adjacent pits, and coal is having to be imported from distant areas. The sub-committee was therefore surprised to learn that at the time when these factories were planned, no machinery existed for supplying the Mines Department with some estimate of the additional coal likely to be needed in an area where new Government factories were being built, so as to enable that department to take steps to ensure that adequate supplies would be forthcoming; though such information in part has admittedly since been furnished. It does not appear, moreover, that the department is ever consulted when such extensions or factories are planned. The sub-committee strongly recommends that in this, and other areas, where similar circumstances may prevail, action should immediately be taken by the Government Departments concerned to collect quarterly estimates of the probable future coal requirements for a year ahead, so that the Mines Department may be informed of the additional supplies for which arrangements must, somehow or other, be made. In the area to which particular reference has been made there was an acute shortage in the last war, which ultimately resulted in a decision that in no circumstances were future factories to be located there. It seems that history has repeated itself in the same area in this war.

A Proposal for the Re-organisation of Transport

The sub-committee has considered certain proposals for the re-organisation of transport, which were put before them by a witness employed as transport manager by a large and well-known trading organisation. The witness proposed, in effect, that traffic on the railways should be concentrated at a limited number of stations at intervals of some 20 or 30 miles for exchange with road vehicles, while intermediate stations should be closed; and he contended that this would allow increases to be made both in the size of wagon loads and in the speed of goods trains, with corresponding advantages in the case of passenger traffic. He calculated that his proposals would, if carried into effect, enable an annual saving of some £30,000,000 to be made in the cost of operating the railways. The sub-committee gave careful consideration both to these proposals, and to the evidence which it heard, in connection therewith, from experts engaged in the operation of the railways. It came to the conclusion that, whatever the merits of the witness's scheme, it would involve not only a costly and far-reaching reorganisation of the present methods of handling traffic, both by railways and traders, but also an expensive revision of the railway rate structure, while in addition there would be considerable opposition from traders whose existing facilities would be radically altered. The sub-committee, therefore, considers that it would be impracticable to contemplate such a scheme in wartime, although it might repay further consideration after the cessation of hostilities.

Canals and Road Transport

The sub-committee has examined the possibility of greater use being made of the canal system; it notes that the Minister of Transport has now appointed an investigator to report on this question, and it has therefore decided to suspend its examination until this investigation is completed. Similarly, the sub-committee understands that the Minister of Transport has under consideration at the moment proposals for using road transport in greater volume to assist railways in clearing docks and other centres. It will consider these new proposals in due course.

The Economic Effect of Transport Delays

The sub-committee feels it necessary to emphasise that delays in transport of urgently needed materials such as coal, raw materials required by munition factories, finished products to the purchasers—whether Government departments or industrial firms—food supplies, etc., not only slow down the speed of the national war production effort, but cause waste of money. In many cases the extra cost of speeding up production by overtime or special planning may be completely wasted by delays in transport. It is, therefore, imperative that heroic and sustained efforts be made by all concerned in transport to avoid delays and surmount the abnormal difficulties resulting from present circumstances.

General Observations

The sub-committee has hastened this report and has confined it mainly to its observations on problems of transport as affecting coal distribution and clearance of cargoes at the ports, having regard to the special urgency of these matters and the extra cost involved in these delays. It will, in due course, report further upon the broader and more general aspects of transport as a whole, including roads and canals.

Further R.A.F. Raids on Berlin

On the night of March 23/24 aircraft of the Bomber Command made a heavy attack on the Berlin area; the raid was the second this year and the 38th on the German capital. The first attack by the R.A.F. took place on the night of August 26/27, 1940, and the operations against Berlin continued fairly steadily until the end of the year. The targets on practically every occasion have included the main railways, and in this connection the two maps published in THE RAILWAY GAZETTE of March 21, at pages 334 and 335, showing the railways in the neighbourhood of the capital, are of interest. In the most recent raid Polish crews took part for the first time in an attack on Berlin and the official communique issued by the Air Ministry records, as on previous occasions, that railway properties were the subject of attack. Although Berlin has been the subject of air attack only twice so far this year, Government spokesmen have made it clear that, while they recognise the importance of attacks on the German capital, the view is held that better results can be obtained from attacking targets in other parts of Germany which are more directly concerned with the war machine of that country.

An L.N.E.R. War Effort

Since the war began the L.N.E.R. has run over 12,000 special trains for the transport of Servicemen and their equipment, and during 1940 no fewer than 211 trains were operated for the evacuation of nearly 100,000 women and children. This additional traffic, together with many other changes, such as handling merchandise normally conveyed by coastwise shipping, and altered traffic flow resulting from the spreading of industry, have presented the railways with new problems. For instance, on 32 certain branch lines of the L.N.E.R. over 500 freight trains are being run every day as against 180 in peacetime.

L.M.S.R. Stationery Reclamation Depot

By setting up what is believed to be the first stationery reclamation depot in the country, the L.M.S.R. is reclaiming used paper and envelopes at the rate of 100 million pieces a year. So successful has this effort already proved, that the L.M.S.R. is opening almost immediately a second reclamation depot in Glasgow, which will cover the whole of Scotland. The London depot, which is in a large warehouse building in North London, employs over 50 women workers who sort, classify, and parcel-up huge quantities of stationery sent in from 65 salvage centres on the L.M.S.R. system. This salvaged stationery comprises many thousands of envelopes, which can be made re-usable by pasting fresh slips or labels over the old addresses, and bundles of old correspondence, printed forms, and other documents which have been used on only one side and can thus be re-used for taking carbon copies, office memoranda, and other purposes. The whole of the L.M.S.R. system is being systematically combed for such paper; many of the old documents that have recently been taken out of the files date from before the days of typewriters, when the first essential of an efficient railway clerk was the ability to write a flowing script! When sacks and hampers of old files are brought into the reclamation depot, they are rough-sorted to remove unsuitable waste paper, and the sorters then classify the remainder into the four or five standard sizes of typing paper; sizes smaller than standard, which are made into note-pads; and sizes larger than standard, which are despatched to firms of printers for cutting down to standard. Some of the processes are illustrated at page 370. All sizes of standard paper when sorted

are bundled in 1,000's and despatched to the L.M.S.R. Stationery Stores for re-issue. Nothing that goes into the Reclamation Depot is wasted; all pins, paper clips, and binders are taken out and sorted, and more than a hundredweight of pins alone are recovered every month, whilst about three tons of scrap paper not suitable for re-use is sold monthly, apart of course from the large tonnage of waste-paper collected all over the system for repulping which in 1940 totalled over 3,000 tons.

Fewer Railway Forms

Apart from reclaiming used paper, the L.M.S.R. is achieving considerable wartime paper economy by reducing the number and dimensions of the numerous different forms required for railway business. Experts are examining the forms used by every department with a view to seeing whether they cannot be reduced in size or even eliminated. Although the paper shortage has stimulated this drive, the present policy is in continuance of that adopted by the L.M.S.R. for a number of years prior to the war.

Strategic Air Raid Alarms in Enemy Countries

A press message from Lisbon states that, in order to avoid increasing the sense of national humiliation in Italy which is resulting from the realisation of the country's complete dependence upon Germany, air raid alarms were sounded in Rome recently for an unusual purpose. It is said that many train loads of German troops were travelling *via* Rome, and that during their transit through the town the air raid alarms were sounded.

It may be recalled that neutral reports of similar procedure in Germany itself were circulated during the campaign in the West, when it was stated that air raid alarms were sounded in the Black Forest area so that the German civilians should take cover and not have the opportunity of seeing the passage of ambulance trains with wounded German soldiers.

Sweden to England via the U.S.A.

Recently, 584 paraffin stoves, manufactured in Sweden for England, had to travel from Petsamo on the Arctic Ocean to the U.S.A. and be reshipped to England.

Passengers between China and Burma

Chinese nationals desiring to enter Burma must henceforth obtain passports from the Chinese Foreign Office and visas from the British Consulate, it was officially announced in Chungking on March 4.

Transit Traffic between Russia and Germany

The movement of freight from Russia to Germany should be expedited considerably by the establishment of nine new re-loading and marshalling yards on the frontier, according to a report which has reached the United States Department of Commerce. It is added that such points formerly numbered only five.

The Mogadiscio Railway

According to a statement issued by the Ministry of Information (Military Affairs), the British advance from Mogadiscio up the river Webi Shebelli used the same route as that adopted in April, 1936, by the Italian Southern army in advancing to capture Harrar. The Italians used the railway, which then ran to Villagio Duca Degli Abruzzi, and prolonged it to Bulo Burti, which is still the railhead. From Bulo Burti, they built an asphalted road to Belet Ven with a 300-ft. wooden bridge over the Shebelli and a ballasted road with bridges of reinforced concrete to Gorrahei. Earlier reference to this railway was made at page 259 of our March 7 issue.

RAILWAY AND OTHER MEETINGS

Isle of Man Railway Company

The annual general meeting of the Isle of Man Railway Company was held at Station Buildings, Douglas, Isle of Man, on March 12. Mr. R. G. Hampton, M.H.K., Chairman of the company, presided.

The Secretary and Manager, Mr. A. M. Sheard, having read the notice convening the meeting,

The Chairman, in the course of his speech, said that it had been the experience for years for the company to make a profit in the summer months only, and to run the services for the rest of the year at a considerable weekly loss. This, of course, had resulted in facilities being maintained for the benefit of the community, and had become accepted both there and in England as a normal thing for railways to do as public utility undertakings, but during the last few years rising costs had made it impossible for railways to carry on without serious losses, and the English Government, after long consideration and full investigation of the circumstances, decided that the railways should in the national interest and in view of their vital importance in time of war be guaranteed a minimum net revenue based on the average earnings for the three years 1935 to 1937. That was being done in England, and their directors were convinced that similar provision should be applied to their company through the Manx Government, if the railway was to continue to function efficiently and survive to serve the community when the war was over. He added that the Railway Regulation Act, 1878, provided that it should be lawful for the Court of Tynwald, with the approval of the Treasury, by resolution to guarantee on such terms and conditions as might be considered advisable payment of dividends to shareholders or stockholders, or to guarantee that the gross or net earnings or revenue should be equal to at least a certain fixed amount, and that any liability under any such guarantee should be a charge on the general revenue of that isle.

They had therefore approached His Excellency through the Government Secretary on May 15 last, stating the facts in regard to their financial position and the value of that undertaking in the life of the community—the amount of employment it provided and the essential services it maintained throughout the year, for the greater part at a considerable loss. The matter was referred to the War Committee of Tynwald for its consideration, and it decided that the matter should be left in abeyance for further consideration, until the conclusion of the financial year. Meantime, attention was directed to the War (Local Conditions) Act, in case the company might have cared to take advantage of it. The committee appointed under the Act was authorised to give the financial aid necessary to ensure that businesses dependent on the visiting industry were kept in readiness for the resumption of the industry at the end of the war, and the directors therefore applied to that committee for a grant to cover the working loss, and to pay the debenture interest, which was a rent or mortgage interest on the property. If the company was not running at all there might be a case for asking for a remission of that interest in wartime. Ordinary and preference shareholders had to do without, but the directors felt that at least while the company was doing such essential national work, any loss in doing it should be a charge shouldered by the Government and not an accumulating debt on the company. So far they had not had a definite answer, and they therefore postponed making any decision regarding the payment of the debenture interest due at December 31. It would be a disaster if for any financial reason the railway services were curtailed. The Island, which had so largely followed English legislation in regard to social and other matters, had a precedent for giving a guarantee there similar to that which had been given to the English railways.

He emphasised particularly the vital importance of the company to the south of the Island. Port Erin, Port St. Mary, and district were dependent altogether on it for facilities. Their development as summer resorts would probably not have been possible without the railway, but he was endeavouring to enlist an intelligent and sympathetic appreciation of the company's position and its services to all parts of the island under the extremely difficult conditions now prevailing and the pressing need for the Government assistance for which application had been made.

The reports and accounts were adopted.

XUM

Notes and News

French Railway Accident.—In a collision, on March 19, between a goods train and a passenger train at Pessac, four miles south of Bordeaux, three persons lost their lives.

Import Licensing Department change of address.—The Board of Trade has announced that the address of the Import Licensing Department, on and after April 1, and the Machinery Licences Division of the Industrial Supplies Department, on and after April 3, will be 1–6, Tavistock Square, London, W.C.1, Telephone Euston 4433

Railway Abandonment in Canada.—Prior to 1932, railway abandonment in Canada was negligible. In 1932 and 1933, however, the Canadian railways abandoned a total of 282 miles and since then the annual abandonments have ranged from 55 to 399 miles. In 1940 a total of 111 miles were abandoned.

Air-Conditioned Carriages in the U.S.A.—On January 1, 1941, Class I railways in the U.S.A. and the Pullman Company had 12,200 air-conditioned passenger carriages in operation, according to a report just received by the Association of American Railroads. This was an increase of 485 compared with the number on January 1, 1940. Of the total number of such carriages, Class I railways on January 1 of this year had 6,961, an increase of 365 compared with the same date last year. The Pullman Company on January 1 of this year had 5,239, an increase of 120 compared with January 1, 1940.

Proposed Yunnan-Burma Railway Loan.—Messages, dated March 22 and 24, from Chungking state that the Chinese Government has decided to float a £2,500,000 loan for the construction of the Yunnan-Burma Railway. It would be a joint Chinese, British, and American enterprise. The message states that the loan is for a line from Kunming to Lashio, but as Lashio is 100 miles within Burmese territory, its application to this section of line should await confirmation. It is further stated that Mr. Tu Cheng-Yuan, the Engineer-in-Charge of the construction, is on his way to the United States to negotiate with American railway interests, presumably for the supply of rails and other equipment. Meanwhile, the paragraph on page 362 in our overseas columns probably refers to the acceleration of the earthwork and bridge substructure works.

Buenos Ayres Western Railway.—The company proposes to issue £395,910 5 per cent. secured notes in exchange for a similar amount of 4 per cent. unsecured notes which matured on January 1, 1940. The balance of the issue, amounting to £54,090, held by the company is to be cancelled. A meeting to consider the proposals is to be held at River Plate House, E.C.2, today (March 28) at noon.

L.M.S.R. Film on Salvage.—The L.M.S.R. Advertising & Publicity Department has made a film on salvage which will be shown to members of the staff of the company to afford guidance in the avoidance of waste and the reclamation of waste useful in the war effort, Lord Stamp speaks a foreword to the film, which shows not only the scope for salvage on railway property, but gives useful practical hints on organising salvage collection.

Contracts and Tenders

The South Indian Railway has placed the following orders to the inspection of Messrs. Robert White & Parners:—

Steel Peech & Tozer: 28 axle billets; Brown Bayley's Steel Works, Limited: 16 cwt. long strand steel; T. F. Johnson: miscellaneous articles and materials.

The Peruvian Corporation has placed a contract for locomotive spares for the Central Railway of Peru with Beyer, Peacock & Co., Ltd.

According to our contemporary, the *Railway Age*, the Schneider armament works at Le Creusot, in occupied France, which has been idle since June 17, 1940, is to be re-opened as a locomotive and car equipment plant in the near future. This information is quoted from a copyrighted article by Edward Haffel appearing in the New York *Herald Tribune*. Although the Schneider works has manufactured locomotives in the past, it has been principally an armament factory, ranking as one of the largest in the world.

The Canadian National Railways have received tenders for 25 freight and passenger locomotives. Details of dimensions and class will not be made known until contracts have been allocated.

Irish Traffic Returns

IRELAND		Totals for 10th Week			Totals to Date		
		1941	1940	Inc. or Dec.	1941	1940	Inc. or Dec.
		£	£	£	£	£	£
Belfast & C.D. (80 miles)	pass.	2,696	2,061	+ 635	27,674	21,862	+ 5,812
	goods	1,136	493	+ 643	10,674	5,006	+ 5,668
	total	3,832	2,554	+ 1,278	38,348	26,868	+ 11,480
Great Northern (543 miles)	pass.	12,950	9,500	+ 3,450	118,700	87,100	+ 31,600
	goods	17,700	11,600	+ 6,100	156,900	115,100	+ 41,800
	total	30,650	21,100	+ 9,550	275,600	202,200	+ 73,400
Great Southern (2,076 miles)	pass.	33,218	28,716	+ 4,502	326,451	273,398	+ 53,053
	goods	51,126	49,564	+ 1,562	503,092	433,951	+ 69,141
	total	84,344	78,280	+ 6,064	829,543	707,349	+ 122,194
L.M.S.R. (N.C.C.) (247 miles)	pass.	7,680	4,070	+ 3,610	66,660	37,510	+ 29,150
	goods	7,260	3,590	+ 3,670	62,030	33,380	+ 28,650
	total	14,940	7,660	+ 7,280	128,690	70,890	+ 57,800

British and Irish Railway Stocks and Shares

Stocks	Highest 1940	Lowest 1940	Prices Mar 25, 1941	Prices Rise/Fall
G.W.R.				
Cons. Ord.	52	22½	33	—
5% Con. Pref.	103½	58	89½	+3
5% Red. Pref. (1950)	105½	88	98½	—
4% Deb.	107½	90½	107½	+1
4½% Deb.	108½	96½	108	—
4½% Deb.	114½	96	113½	—
5% Deb.	124	106	122½	—
2½% Deb.	66½	57	66	—
5% Rt. Charge	117½	97	118	—
5% Cons. Guar.	117	90½	119½	+4
L.M.S.R.				
Ord.	24⅞	9	12⅝	+⅛
4% Pref. (1923)	60½	21⅜	37¼	−¼
4% Pref.	70⅜	35	51	+½
5% Red. Pref. (1955)	94½	60	81½	—
4% Deb.	101⅜	81	101¼	+¼
5% Red. Deb. (1952)	109½	102	108	—
4% Guar.	93¾	65	91¾	+2½
L.N.E.R.				
5% Pref. Ord.	8⅜	1½	2⅜	+⅛
Def. Ord.	4⅜	1¼	1⅜	+⅛
4% First Pref.	60	20	36½	+¼
4% Second Pref.	22⅞	6½	12½	—
5% Red. Pref. (1955)	80	34½	58½	—
4% First Guar.	86½	56	82	+2½
4% Second Guar.	77½	37	67½	—
3% Deb.	73½	54½	74½	+1
4% Deb.	97⅜	74	96	—
5% Red. Deb. (1947)	107	96¾	104	—
4½% Sinking Fund Red. Deb.	104	98	101½	—
SOUTHERN				
Pref. Ord.	79	34	46½	+¼
Def. Ord.	22½	7	10⅜	−⅛
5% Pref.	104½	58¾	86	+3½
5% Red. Pref (1964)	105	85	94½	—
5% Guar. Pref.	116¾	90	118½	+2
5% Red. Guar. Pref. (1957)	114 7/16	94	109½	—
4% Deb.	106¾	84½	107½	+1
5% Deb.	122½	100	123½	—
4% Red. Deb. (1962–67)	106	96½	104	—
4% Red. Deb. (1970–80)	106⅜	93	104	—
FORTH BRIDGE				
4% Deb.	95½	87	91½	—
4% Guar.	93½	81½	89½	—
L.P.T.B.				
4½% "A"	116	103	114½	+2
5% "A"	121¼	107	121½	+1½
4½% "T.F.A."	105½	101	102½	—
5% "B"	116	102	110	+2
"C"	65½	24	30½	−1½
MERSEY				
Ord.	26	18¼	21½	—
4% Perp. Deb.	92¼	86¾	91½	—
3% Perp. Deb.	68	63	62½	—
3% Perp. Pref.	57	50¼	53½	—
IRELAND				
BELFAST & C.D.				
Ord.	4	3	4	—
G. NORTHERN				
Ord.	4½	1½	4½	—
G. SOUTHERN				
Ord.	12½	4	8	−½
Pref.	15½	6	10	—
Guar.	36	15	23	+1
Deb.	55½	40	53	−½

OFFICIAL NOTICES

OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday. All advertisements should be addressed to :—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

Atlas Engineering Company

CONSULTING Mechanical Engineers desire to purchase similar established business or amalgamate with same. Box No. 25, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

Atlas Engineering Company

EXPORT Engineering Business—Firm of Engineers desire to purchase well established business with overseas connections engaged in engineering and machine trades. Box No. 52, c/o *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Universal Directory of Railway Officials and Railway Year Book

46th Annual Edition, 1940-41

This unique publication gives the names of all the principal railway officers throughout the world together with essential particulars of the systems with which they are connected. Much general and statistical information about railways is also concisely presented.

Price 20/- net.

THE DIRECTORY PUBLISHING CO., LTD.
33, Tothill Street, Westminster, S.W.1

Questions in Parliament

Prices of Motor Cars

Replying to a suggestion on March 12 by Mr. W. Leach (Bradford Central—Lab.) that the Minister of Transport should consider instituting price control of motor vehicles, Mr. F. Montague said he was aware that in some cases excessive prices had been charged by dealers. Control of the prices of the few new cars available would have little practical effect, and control of prices of second-hand cars presented serious difficulties. The Minister of Transport would always be ready to look into any established instances in which excessive prices were demanded and to take such action as was necessary.

London Queue System

Mr. S. S. Hammersley (Willesden East—C.), on March 18, called the attention of the Minister of Transport to the inconvenience and hardship which arose during the rush hours by the failure of would-be passengers to queue up properly at the recognised bus stops of the London Passenger Transport Board.

Lt.-Colonel J. T. C. Moore-Brabazon in a written reply stated that his information was that in general the queue system was well observed by intending passengers. Signs asking the public to form queues were exhibited at the great majority of stopping places where they were most required, and the fitting of additional signs was proceeding as fast as war conditions permitted. Supervision of queues was exercised by the board so far as practicable with the limited staff at its disposal. In present circumstances he could not see his way to ask the board to arrange for any greater measure of supervision, but he would be ready to discuss with it any particular case which Mr. Hammersley might have in mind.

Reservation of Carriages

Mr. J. J. Tinker (Leigh—Lab.), on March 19, asked the Ministe of Transport on whose authority the notices " Not for Public use " were placed on railway carriage windows, and would he find out if regard was given to ordinary travelling persons when such notices were being used.

Lt.-Colonel Moore-Brabazon (Minister of Transport) : Under certain conditions compartments have to be set aside. When this is done the sign " Not for Public use " is employed.

Mr. Tinker : What conditions are laid down, and to whom do they apply ?

Lt.-Colonel Moore-Brabazon : They are rather curious. The categories are : Broken windows, infectious diseases, corpses, high Service officials, lunatics, convicts, and Cabinet Ministers.

Railway and Other Reports

Whitechapel & Bow Railway.—Net revenue for 1940, after meeting debenture interest, was £65,923 (against £73,181) and is divisible in equal proportions between London Passenger Transport Board and the London Midland & Scottish Railway Company.

King's Lynn Docks & Railway Company.—Net revenue for the year 1940, including estimated adjustment in respect of the period of control, at £5,378 compared with £9,445 for 1939. A sum of £1,200 is transferred from general reserve account, and with £183 brought forward, makes a total of £6,761. Debenture interest takes £6,705, leaving £56 carried forward.

Brown Bayley's Steel Works Limited.—Interim dividend is 5 per cent., tax free, same as last year.

Colvilles Limited.—The directors recommend a final ordinary dividend of 5 per cent., again making 8 per cent. for the year.

Hadfields Limited.—Net profit for 1940 is £259,621, against £264,293 ; final dividend is 15 per cent., making 22½ per cent. for the year (same).

G. D. Peters & Co. Ltd.—Final dividend is 7½ per cent., making 15 per cent. for the year 1940, against 30 per cent. for 1939. Net profit is £114,901, against £128,793.

British Thomson-Houston Co. Ltd.—For 1940 the net profit, after charging £242,895 (against £287,087) to depreciation and £785,000 (against £410,000) for taxation, was £245,126 (against £268,479). General reserve gets £100,000 (same), and the final dividend recommended on the ordinary shares is 7 per cent. (same), leaving £196,310 to be carried forward (against £192,058).

Institution of Railway Signal Engineers

The annual general meeting of the Institution of Railway Signal Engineers was held in London on March 24 with the President, Mr. James Boot, in the chair. No meetings have been held during the past year, but two papers and the report of a committee appointed to recommend a standard form of table for electric lever interlocking were circulated for written comment and, with certain additional contributions, are to appear in the next issue of the proceedings. The library has been closed, and the collection sent to a safe place of storage for the duration of the war. Membership has been well maintained. Further papers have been promised and it is hoped to continue the institution's work in the same satisfactory, if restricted, manner until normal times return.

Mr. Boot was re-elected President and, in a brief address, spoke of the problems that would face the railways when peace had been re-established, and the need for co-operation between signalling engineers and operating officers in order that the best use of track and rolling stock would be obtained, under the minimum expenditure for installation and maintenance. It would be the principal aim of the railways to get the best possible operating ratio. Collaboration would have to be the watchword of the post-war effort and, for it to be effective, information would need collecting and collating beforehand. In that important task the institution would, he was persuaded, be called on to play its part. In spite of war difficulties, progress in signal engineering was still being made and it was essential to maintain the work of the institution to the fullest possible extent.

Mr. H. W. Moore was re-elected Vice-President, Mr. M. G. Tweedie, Hon. Secretary, and Mr. T. S. Lascelles, Hon. Treasurer. The Members of Council for 1941 are : Messrs. F. L. Castle, R. Dell, F. J. Dutton, H. H. Dyer, J. H. Fraser, C. H. Hills, F. Horler, W. R. Jones, L. J. M. Knotts, P. Lomas, R. F. Morkill, A. Moss, L. Preston, S. W. Spendlove, A. W. Woodbridge, and L. J. Boucher. The last-named has been elected to fill the place left vacant by the death of Mr. E. W. Hallam in May, 1940. Messrs. F. Edwards and T. Austin were re-elected Hon. Auditors.

Railway Stock Market

Business in the stock and share markets has remained restricted, sentiment having been governed by the disposition to await the Budget and the next developments in the war. Although little selling was reported, values in some sections of the Stock Exchange were slightly reactionary owing to the small demand in evidence. There was again steady demand for British Funds under the lead of 3½ per cent. War Loan, which reached its highest level since 1938. In fact, business again centred on high class investment stocks, and prior charges and other home railway stocks continued to attract attention in view of the good yields still obtainable. In many instances, however, there was increasing evidence that they are in short supply in the market. Talk that the main-line companies are to be merged into one combine under unified control was not a market factor, it having been pointed out that no suggestion of this kind is under consideration for adoption. There is, of course, every confidence that interest requirements of home railway prior charges will continue to be covered with a substantial margin, and moreover, the assumption is that the minimum revenue guarantee will be maintained, on which basis dividends on the junior stocks would be such as would show substantial yields at current prices. Nevertheless, so long as there is uncertainty as to the manner in which the financial agreement with the Government is to be adjusted, most of the junior stocks will continue to be regarded as more of a speculation than an investment. Increased buying of leading railway and other investment stocks is due in part to the reinvestment of monies arising from the repayment of Indian Government redeemable loans.

Great Western 5 per cent. preference attracted attention in view of the good yield, and as compared with a week ago, further improved from 86 to 89½. Moreover, the guaranteed stock gained three points to 119, and the 4 per cent. debentures were fractionally higher at 107; but the ordinary stock at 33 was unchanged on balance. Southern 5 per cent. preference was in good demand because of the attractive yield; the price has risen from 82⅛ to 86½. Southern guaranteed was 118⅛; the 4 per cent. debentures 107; while the preferred further improved from 46 to 47½; but the deferred at 10⅜ was slightly lower on balance. In accordance with the general tendency, L.M.S.R. 4 per cent. debentures made the higher price of 101, while the guaranteed stock at 92 showed a rise of two points. L.M.S.R. senior preference was better at 51, as was the 1923 preference at 37½, and the ordinary stock improved fractionally to 12¾. L.N.E.R. debentures were in considerable demand; the 4 per cents have appreciated a point to 97, and the 3 per cents at 74½ more than held last week's rise. As regards L.N.E.R. guaranteed issues, the firsts gained a point to 81, and the seconds showed a similar rise to 68. This railway's first preference was 36½, compared with 35½ a week ago; the second preference remained at 12½. London Transport "A" and "B" stocks moved higher, but the "C" was again reactionary, and at 30½ was a point lower on the week.

Argentine railway securities were again inactive, and were unresponsive to hopes that there may be an early resumption of consideration of the railway requests for higher rates. Whereas B.A. & Pacific consolidated debentures were firmer at 25½, slightly lower prices ruled for Central Argentine debentures. San Paulo ordinary was again better on hopes that the dividend may be maintained. After the announcement of the further traffic increase, Canadian Pacific preference improved to 52¾.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1940-41	Week Ending	Traffic for Week: Total this year	Traffic for Week: Inc. or Dec. compared with 1940	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1940	Prices: Lowest 1940	Prices: Mar. 25, 1941	Prices: Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	16.3.41	20,110	— 1,150	11	182,030	207,150	— 25,120	Ord. Stk.	11¼	3½	4¼	Nil
	Argentine North Eastern	753	15.3.41	ps. 111,100	— ps. 26,400	37	ps. 5,450,900	ps. 5,660,500	— ps.209,600	,,	3¾	1	2	Nil
	Bolivar	174	Feb. 1941	3,480	— 40	9	6,680	7,220	— 540	6 p.c. Deb.	6½	5	6½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	8	5	5	Nil
	Buenos Ayres & Pacific	2,801	15.3.41	ps.1,945,000	+ ps.165,000	37	ps.50,123,000	ps. 50,471,000	— ps.348,000	Ord. Stk.	4½	1	1½	Nil
	Buenos Aires Central	190	18.1.41	$70,400	— $20,200	29	$2,477,400	$2,994,900	— $517,500	—	—	—	—	—
	Buenos Ayres Great Southern	5,082	15.3.41	ps.2,858,000	— ps.184,000	37	ps.79,439,000	ps. 88,014,000	— ps.8,575,000	Ord. Stk.	10⅜	3	4	Nil
	Buenos Ayres Western	1,930	15.3.41	ps. 1,033,000	+ ps. 83,000	37	ps.27,224,000	ps. 29,088,000	— ps. 1,864,000	,,	8⅜	2	3	Nil
	Central Argentine	3,700	15.3.41	ps.2,003,750	+ ps.137,400	37	ps.56,265,300	ps. 66,089,400	— ps9,824,100	,,	8¼	2	2⅜	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4	½	1¼	Nil
	Cent. Uruguay of M. Video	972	15.3.41	28,826	+ 3,631	37	814,888	781,692	+ 33,196	Ord. Stk.	3¾	½	2¾	Nil
	Costa Rica	188	May 1940	17,282	— 7,020	48	193,339	245,516	— 52,177	Stk.	23½	14	15½	12⅞
	Dorada	70	Feb. 1941	12,000	+ 1,500	9	24,200	22,700	+ 1,500	1 Mt. Db.	99	97½	98	6 7/16
	Entre Rios	810	15.3.41	ps. 181,100	— ps. 22,900	37	ps. 7,959,600	ps. 9,034,200	— ps.1,074,600	Ord. Stk.	4	½	1½	Nil
	Great Western of Brazil	1,016	15.3.41	9,300	— 4,600	11	125,700	149,300	— 23,600	Ord. Sh.	4/–	1/–	7/8	Nil
	International of Cl. Amer.	794	Jan. 1941	$499,099	— $66,391	4	$499,099	$565,490	— $66,391	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	9d.	9d.	½	Nil
	La Guaira & Caracas	22½	Feb. 1941	7,350	+ 355	9	13,475	14,605	— 1,130	—	6	4	—	—
	Leopoldina	1,918	15.3.41	25,500	+ 2,380	11	260,191	245,066	+ 15,125	Ord. Stk.	2 5/16	¼	⅜	Nil
	Mexican	483	31.1.41	ps. 477,900	+ ps. 23,600	4	ps. 1,315,900	ps. 1,336,000	— ps. 20,100	,,	2/11½	7/32	⅜	Nil
	Midland of Uruguay	319	Jan. 1941	12,385	— 321	30	81,797	68,384	+ 13,413	—	—	—	—	—
	Nitrate	386	15.3.41	2,890	— 4,529	11	20,499	42,211	— 21,712	Ord. Sh.	2⅜	1½	2	6¼
	Paraguay Central	274	15.3.41	$3,024,000	— $143,000	37	$120,953,000	$118,462,000	+ $2,491,000	Pr. Li. Stk.	41	36	30½	19 11/16
	Peruvian Corporation	1,059	Feb. 1941	55,812	— 11,111	35	516,957	531,913	— 14,956	Pref.	4	1	1½	Nil
	Salvador	100	11.1.41	£27,535	— £11,171	28	£318,434	£391,594	— £73,160	—	—	—	—	—
	San Paulo	153½	9.3.41	31,875	— 8,539	10	339,500	349,855	— 10,355	Ord. Stk.	50	23	33	7 7/16
	Taltal	160	Feb. 1941	3,075	+ 745	35	22,510	20,130	+ 2,380	Ord. Sh.	15/1½	⅜	⅜	6 11/16
	United of Havana	1,353	15.3.41	48,985	— 4,430	37	746,372	806,297	— 59,925	Ord. Stk.	⅜	¼	½	Nil
	Uruguay Northern	73	Jan. 1941	1,153	+ 30	30	8,233	7,384	+ 849	—	—	—	—	—
Canada	Canadian National	23,637	14.3.41	1,049,433	+ 250,939	11	10,302,354	8,682,580	+ 1,619,774	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	— 4 p.c.	Perp. Dbs.	86	68	89	4½
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	105¾	95 13/32	101¼	3 11/32
	Canadian Pacific	17,153	14.3.41	736,000	+ 220,600	11	7,188,800	5,880,600	+ 1,308,200	Ord. Stk.	9 7/16	4⅜	7⅜	Nil
India†	Assam Bengal	1,329	30.4.40	45,187	+ 6,529	4	135,060	120,437	+ 14,623	Ord. Stk.	99⅜	71	100	3
	Barsi Light	202	10.1.41	4,327	+ 787	41	124,207	100,492	+ 23,715	—	—	—	—	—
	Bengal & North Western	2,086	28.2.41	271,125	— 2,964	22	1,281,323	1,196,608	+ 84,715	Ord. Stk.	283	234	296½	5⅜
	Bengal Dooars & Extension	161	Sept. 1940	14,625	+ 508	26	78,405	66,243	+ 12,162	,,	—	—	—	—
	Bengal-Nagpur	3,269	31.12.40	284,550	+ 15,859	39	6,543,848	5,895,495	+ 648,353	,,	96	83 7/8	99¼	4
	Bombay, Baroda & Cl. India	2,986	10.3.41	337,575	+ 45,000	50	9,721,200	8,614,500	+ 1,106,700	,,	108	99 7/8	108½	5½
	Madras & Southern Mahratta	2,939	10.1.41	174,225	+ 8,269	41	4,728,299	4,450,847	+ 277,452	,,	104	97⅞	103½	7¼
	Rohilkund & Kumaon	571	28.2.41	57,600	— 1,989	22	269,465	252,386	+ 17,079	,,	284	238	290	5½
	South Indian	2,542	31.12.40	141,648	+ 8,811	39	3,420,638	3,075,356	+ 345,282	,,	93¾	83	94½	4½
Various	Beira	204	Jan. 1941	76,256	—	17	284,761	—	—	—	—	—	—	—
	Egyptian Delta	623	20.12.40	9,626	+ 2,520	38	169,255	155,708	+ 13,547	Prf. Sh.	7/10½	⅜	⅜	Nil
	Kenya & Uganda	1,625	—	—	—	—	—	—	—	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	53	44½	47½	7⅜
	Midland of W. Australia	277	Nov. 1940	15,716	+ 4,027	22	78,885	63,495	+ 15,390	Inc. Deb.	88	80	87½	6⅝
	Nigerian	1,900	28.12.40	49,061	+ 258	39	1,537,595	1,336,451	+ 201,144	—	—	—	—	—
	Rhodesia	2,442	Jan. 1941	491,762	—	17	1,928,021	—	—	—	—	—	—	—
	South Africa	13,287	18.1.41	773,368	+ 99,078	42	29,030,638	27,144,961	+ 1,885,677	—	—	—	—	—
	Victoria	4,774	Aug. 1940	888,289	+ 190,022	9	1,756,717	1,383,157	+ 373,560	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of 1/16 Argentine traffics are now given in pesos
† Receipts are calculated @ 1s. 6d. to the rupee